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MENTAL HEALTH AND THE AKERFELDT TEST*

The Relationship of Mental Health to the Oxidation of N, N-Dimethyl-p-Phenylenediamine Dihydrochloride

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Introduction

Growing attention has been focused in psychiatry on the possible use of biochemical tests as aids in the diagnosis of mental illness. Recently it has been suggested that the metabolism of epinephrine and other amines may be altered in schizophrenia. Akerfeldt (1), for example, has claimed that the fresh blood serum from mentally-ill patients has the capacity to oxidize N, N-dimethyl-p-phenylenediamine (DPP) more rapidly than fresh serum from healthy control subjects. He suggested that this increased oxidizing activity of the patient's serum was probably due to an increase in the level or activity of ceruloplasmin (a copper-containing enzyme) in the patient's serum and a decrease in the ascorbic acid content. Ascorbic acid was identified as accounting for 95% of the substance in serum capable of reducing the oxidation of DPP. Akerfeldt, as well as most other workers, noted that the DPP oxidation test is not specific for mental disease.

Three subsequent papers have a direct bearing on the usefulness of the Akerfeldt test as a diagnostic aid in psychiatry. The first of these is a detailed study by Horwitt *et al.* (6) who concluded that the test is of very limited use in evaluating mental illness. The importance of nutritional controls was emphasized and a test described by Ravin, which involves a 60 min. incubation period as an indirect control of ascorbic acid, was suggested as superior to Akerfeldt's standard procedure.

A further analysis of Horwitt's data, however, revealed that statistically significant differences did exist between his patient and control groups in the Akerfeldt test results ($\chi^2 = 4.09$; $p < .05$) and ascorbic acid levels ($\chi^2 = 4.16$; $p < .05$), but not in the Ravin test or serum copper values.

It was further determined that the Akerfeldt values were inversely related to serum ascorbic acid ($r = -.523$; $p < .01$), but that the Ravin test values are not so related ($r = .037$; $p > .05$). However, the Akerfeldt and Ravin tests are positively correlated ($r = .565$; $p. < .05$). Thus it appears, as Horwitt suggested, that the Ravin test equals the Akerfeldt test controlled for ascorbic acid. In addition, *both* the Akerfeldt and Ravin tests are significantly related to serum copper levels ($rs = .655$ and .714 respectively) and to age ($rs = .314$ and .282 respectively).

Since the Ravin test is the Akerfeldt test controlled for ascorbic acid and the Ravin test is unrelated to the patient-control dichotomy, the significant patient-control difference in Akerfeldt values found in Horwitt's data is prob-

*This study was performed under the direction of Dr. C. A. Cleland, Superintendent, with the advisory participation of Dr. J. F. Cawthorpe and Dr. R. D. Whiteside. The authors would like to express their sincere appreciation to the ward staff of the Ontario Hospital, St. Thomas, for their generous co-operation in serving as control subjects for this experiment.

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ably due to the patient-control difference in ascorbic acid. This of course, is in keeping with Horwitt's major conclusions.

The low but statistically significant correlation of the DPP oxidation test results to age is unexplained. This same trend was found in the data of the present experiment and a further analysis of data presented by Scheinberg *et al.* (8) revealed a significant correlation ($r = .410$; $p < .01$) between age and direct measurements of serum ceruloplasmin content.

These authors, comparing direct measurements of ceruloplasmin concentration in 20 schizophrenics and 20 normals, found significant mean patient-control differences in this variable but considerable overlap between groups. However, since serum ceruloplasmin concentration is significantly correlated with age, and the patient group in this study tended to be older, the significance of the obtained mean difference is questionable. It should also be noted that a statistically non-significant trend was apparent in Horwitt's data for age to be correlated with plasma copper ($r = .244$), 95% of which is contained in ceruloplasmin (4).

A third paper by Aprison and Drew (2) reported a failure to reveal significant differences between schizophrenic and non-schizophrenic children in the optical density, slope or lag period of the Akerfeldt reaction.

In contrast to these generally negative results, Friedhof (3) has found substantial normal-schizophrenic, Akerfeldt-reaction differences. He also has noted that feeding schizophrenic patients ascorbic acid tends to make their Akerfeldt tests more "normal". Zeller and Cleghorn (11) have also reported some positive results.

The present study was undertaken to provide additional data in terms of which the practical psychiatric use of the Akerfeldt test might be evaluated. Special features of this experiment include: (1) very careful matching of patients and controls with respect to age and sex (2) a refinement of the usual patient-control dichotomy by the use of a battery of psychological tests (3) selection of the patient sample to provide age-sex balanced groups of two different diagnostic entities (4) elimination from the subjects of the study any persons with significant somatic illness.

It was not possible, unfortunately, to institute control of the ascorbic acid intake of our subjects or to measure their serum ascorbic acid levels. We felt, however, that our institutional diet was adequate in this substance.

Method

A. *Subjects: Group I*

The *Ss* in this group were 8 male and 8 female patients who were matched for age, with 8 male and 8 female ward staff who served as control *Ss*. Eight patients were diagnosed as suffering from paranoid schizophrenia and 8 were catatonic schizophrenics. Each of these diagnostic categories was represented equally by sex. All *Ss* were carefully selected from larger numbers so that all were English-speaking, had Grade 8 education or better and were between the ages of 25-55. No *S* was suffering from any somatic disease and all patients used were taken off any form of treatment well in advance of the testing procedures.

Group II

An additional group of 16 patients and 16 controls was selected in the same way as Group I except that the criteria of age limits, education and language were not required.

The age and educational data on Groups I and II are presented in Table I.

TABLE 1
AGE AND EDUCATION MEDIANS AND RANGES OF PATIENT AND CONTROL SAMPLES IN YEARS

	Subject Groups							
	I				II			
	Patients N = 16		Controls N = 16		Patients N = 16		Controls N = 16	
	Range	Mdn.	Range	Mdn.	Range	Mdn.	Range	Mdn.
Age.....	20–52	40.5	23–53	40.5	20–70	41.5	24–53	40
Education.....	8–17	9.5	8–16	11	7–12	8	8–16	10

B. *Procedure*:

Akerfeldt Test

The fasting blood samples, collected in vacuum tubes, were treated according to Akerfeldt's original procedure. One and a half c.c. of a fresh solution of 0.1% N, N-dimethyl-p-phenylenediamine dihydrochloride (DPP) were added to 1.5 c.c. of serum. Optical density was read on a Leitz Photoelectric Colorimeter, "zeroed" with a water blank and using filter "A". Readings were taken each minute for 10 min. both with a reagent blank made of 1.5 c.c. of water and 1.5 c.c. DPP and a serum blank made of 1.5 c.c. serum and 1.5 c.c. water. (The above procedure was also used with the Coleman Jr. Spectrophotometer, "zeroed" with a water blank and set at a wave length of 550, when subsequent checks of the Leitz machine and our laboratory procedures were conducted).

Psychological Tests

Immediately after the blood samples had been taken all *Ss* in Group I were given a battery of psychological tests. These tests were: the Vocabulary and Block Design subtests of the Wechsler Adult Intelligence Scale (WAIS); the Bender Gestalt (BG) test with a memory section (BG Mem); the Tendler Word Association Test (T1 to T5) and the adult's and children's version of the Differential Diagnostic Technique (DDT and CDDT). These latter tests are drawing tests which, for the purpose of this experiment, were used as a refinement of the BG.

These tests produced 11 scales all measuring different aspects or dimensions of ego control or mental health. The DDT, CDDT, BG Z and BG RI scores are derived by objectively scoring the distortions present in a subject's attempt to copy relatively simple geometrical designs or figures. The BG Memory score (BG Mem) is simply the number of recognizable figures a subject is able to reproduce from memory immediately after having copied the nine BG designs.

Variables T1 to T5 are subscores derived from the Tendler Word Association Test. T1 is the number of uncommon associations given in response to the 25 stimulus words. T2 is the number of delayed reaction times (in excess of 3 sec.). T3 is the number of failures to recall the association given upon first presentation of the stimulus words. T4 is the number of noun-adjective or adjective-noun combinations in the stimulus-response pairs. T5 is the number of

"contrast" responses, e.g. black-white. The WAIS IQ is a figure derived from pro-rating a *S*'s scores on the Vocabulary and Block Design subtests of WAIS.

Results

Psychological Tests

Table 2 illustrates that of the 11 variables derived from the test battery, 6 gave rise to statistically significant patient-control differences in the predicted direction. The other 5 were in the expected direction but did not reach the usual significance levels. In general, it was quite apparent from test data that our samples of *S*s were drawn in such a way that great differences in mental health existed between them (10).

Akerfeldt Test Results

Curves describing the 10 min. time course of the Akerfeldt, serum-blank reaction are shown in Fig. 1. Curves of similar shape were obtained using a reagent blank.

Each point on the upper two curves is the mean value for either 32 patients or 32 controls. Each point on the lower curves is the variance of the corresponding mean.

The stability of the curves for each *S* over the 10 min. period is indicated by the following correlations: 1 min. values with 3 min. values, $r = .936$ ($N = 64$); 3 min. values with 5 min. values, $r = .969$ ($N = 64$), and 5 min. values with

TABLE 2
MEDIAN AND RANGE SCORES OF PATIENT AND CONTROL SAMPLES OF GROUP 1 ON ELEVEN VARIABLES DERIVED FROM THE BATTERY OF PSYCHOLOGICAL TESTS

Variables	Medians		Ranges		χ^2 *	*P* **
	Patients	Controls	Patients	Controls		
	N = 16	N = 16	N = 16	N = 16		
1. DDT	−10	−4	−26 to + 9	−18 to + 12	1.20	.30
2. CDDT	−10	−2	−18 to + 16	− 6 to + 13	4.50	.05
3. BG Z	92	55	56 − 118	33 − 99	4.52	.05
4. BG R.I.	17	7	3 − 33	0 − 21	4.15	.05
5. BG MEM.	3	6	0 − 7	5 − 8	16.88	.001
6. TI	15	9	6 − 24	4 − 20	7.30	.01
7. T2	9	4	0 − 22	0 − 13	10.60	.01
8. T3	7	3	2 − 23	0 − 9	3.14	.10
9. T4	7	5	0 − 12	0 − 13	0.51	.50
10. T5	3	9	0 − 16	0 − 21	1.13	.30
11. WAIS IQ	90	113	68 − 133	93 − 136	0.13	.80

* All chi squares are based on a median test (9).
** *P* values of .05 or < .05 are considered to be significant.

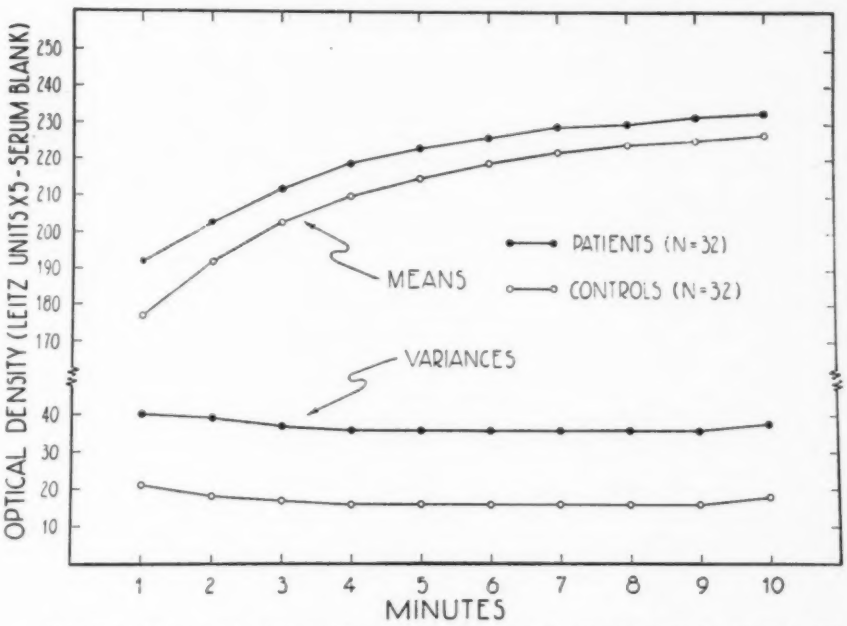

Figure 1. Means and corresponding variances of optical density over the 10 min. test period for 32 patient and 32 control Ss.

10 min. values, r = .979 (N = 64). This means that test of patient-control differences taken at any time after the first min. will give essentially similar results.

A finding of note is that serum density is correlated − .794 ($p < .01$) with the 10 min. Akerfeldt (reagent blank) values. This is reflected in the fact that the 1 min. Akerfeldt values taken with a reagent blank correlate only .510 (N = 64), with the 1-min. Akerfeldt values taken with a serum blank.

A comparison of 1-min. Akerfeldt, serum-blank values of the 32 patients and 32 controls produced a t value of 1.03 which is not statistically significant. A correlation of a composite mental health score derived from the psychological test battery with the 3-min., Akerfeldt, reagent-blank values also did not reach usual statistical significance levels (r = .097; N = 32).

A comparison of the 6-min., Akerfeldt, reagent-blank values for the 16 paranoid and 16 catatonic schizophrenics yielded a non-significant t value of 0.111. The 6-min., Akerfeldt, reagent-blank values of the 18 patients who had hospitalized for more than 3 years were compared with the corresponding values of 14 patients hospitalized for longer than 3 years and the resulting t value (0.533) was not significant. A correlation of age against 3-min., Akerfeldt, reagent-blank values, however, turned out to be .297 which is significant at the 5% level of confidence.

Discussion

In general the results of this experiment are consistent with those of other investigators working with the Akerfeldt test. However, because other studies have turned up some positive trends and statistical, though not practically useful,

differences between patient and non-patient groups, we felt that some additional checks on our laboratory procedures were in order.

One possible explanation of our negative findings could have been that we used a Leitz colorimeter instead of a spectrophotometer. As a check on this possibility, the Akerfeldt test was repeated on a group of 31 new *Ss* and readings were taken on both the Leitz Colorimeter and a Coleman Jr. Spectrophotometer. The 6-min. values from the two machines correlated .891, indicating that our negative results could not be attributed to our use of the Leitz Colorimeter.

A second possible source of error was suggested by Dr. A. Friedhoff (personal communication). This involved the possibility that the ascorbic acid in the serums might have oxidized before the tests were made. To check this possibility a further series of tests were done on 15 *Ss* in which blood samples were refrigerated immediately after being taken in vacuum tubes and were brought to room temperature less than one half hour before conducting the test. The mean curve for this group of *Ss* possessed the same characteristics as that of the original study, i.e., as in Fig. 1. It seemed, therefore, that the premature oxidation of ascorbic acid could not explain our negative results.

Summary

Comparison of DPP oxidation curves of carefully-matched groups of schizophrenics and controls failed to reveal statistically significant differences. DPP oxidation is unrelated to mental illness *per se*, sex, length of hospitalization or differential diagnosis; it is related significantly to age and serum density.

These results suggest, in agreement with Horwitt, that the Akerfeldt reaction in its present form is so easily contaminated by nutritional and other artefacts as to render it useless as a practical aid in psychiatric diagnosis.

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Résumé

Akerfeldt suggera qu'il existait une différence entre l'oxidation du D.P.P. (n.-n. déméthyl - p - phenylenelianine) par du sérum de schizophrène et l'oxidation du D.P.P. par du sérum de sujets normaux. C'est à la suite de cette suggestion que des courbes d'oxidation du D.P.P. d'une durée de 10 minutes furent faites

chez un groupe de schizophrènes et comparées à des courbes faites chez un groupe contrôle.

Cette comparaison n'a mis en évidence aucune différence significative. Les résultats de cette étude tendent à démontrer que la test d'oxidation du D.P.P. n'est pas modifié par les troubles mentaux per se. Il n'est pas non plus modifié par le sexe, la durée de l'hospitalisation ou le diagnostic. Par contre il est influencé par l'âge du sujet et la densité du sérum.

Les données de cette étude indiquent que le test d'oxidation du D.P.P. est tellement sensible à certains facteurs, dont le facteur nutritif, que sa valeur pratique comme aide diagnostique est nulle.

ADRENAL CORTICAL STRESS EFFECTS IN SENILITY*

V. A. KRAL, M.D. AND B. GRAD, Ph.D.[1]

It is a well known fact that the behavioural and psychopathological changes in patients with senile brain disease do not parallel the neuropathological findings. Gowers was among the first to remark on the fact that considerable brain atrophy might be found in persons who retained normal mental capacities even until 80 to 90 years of age (1). Similar observations have since been reported by others (2). The opposite also holds true. Grünthal (3) reported on a case with severe senile dementia where the brain weight was found to be nearly normal. Furthermore, histological changes, in the brain are quantitatively not strictly proportional to the degree and speed of deterioration psychiatrically present in senile patients (4). This led Rothschild and Sharp to assume that factors of a more personal nature are operative in the pathogenesis of senile psychoses (5). Kral and Wigdor (6) and Wanklin *et al.* (7) arrived at similar conclusions in clinical studies. However, it should not be assumed from these findings that the structural changes present in the brains of patients with senile psychoses are of negligible importance. It only means that they are not the sole factor in the pathogenesis and possibly also the etiology of senile psychosis, but that other factors also have to be taken into consideration to arrive at a scientifically satisfactory understanding of the etiology and later perhaps at a therapy and prevention of this disease which is taking on an ever increasing importance in our society.

One such additional factor might be the stress the individual endured during his past life and particularly during the period immediately preceding the onset of his disease. It should be understood, however, that the problem dealt with here is the role stress may play in the etiology of senile psychosis and not in the process of aging itself.

Even in this limited sense the problem is fraught with theoretical and methodological difficulties. It is not within the scope of this paper to review the various definitions of stress or to formulate a new one. Lehmann's operational formulation of stress, strain and distress seems satisfactory (8).

Of greater importance methodologically seems to be the fact that the aging organism shows a "decline in resistance to random stresses" (9). This has been shown to hold true for aging experimental animals as well as for aging humans (10, 11). The declining resistance to stress has to be considered in every investigation of specific problems of senescent pathology.

The study to be described here forms part of more extensive investigations into the stress tolerance of patients suffering from senile dementia as compared with other groups. For this purpose various types of stresses are being used as well as several forms of tests to assess their effect. The stress used in this study was blindfolding. This was chosen as a form of stress which on the one hand is not physiologically harmful to the aged person and on the other hand is stressful enough to cause, in certain situations, anxiety and confusional reactions (12, 13).

*This study was supported by the Federal-Provincial Mental Health Grant—No. 604-5-50. The authors wish to express their appreciation to Dr. C. Skitch of the Verdun Protestant Hospital for permitting us to investigate elderly subjects with senile dementia or schizophrenia, and to Mr. A. Deskin of The Montreal Hebrew Old People's and Sheltering Home for making it possible to study normal elderly persons. The authors are also grateful to Mrs. H. Berger and Mr. J. Berenson for their technical assistance in counting the circulating eosinophils and to Mr. L. Caplan for his assistance in determining the salivary Na/K ratio.

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TABLE 1
AGE DISTRIBUTION OF MEN AND WOMEN BLINDFOLDED

Group	Men	Women	Both
Young Normals	23[1] ± 1[2]	25 ± 4	24 ± 2
Old Normals	83 ± 2	86 ± 4	84 ± 2
Young Psychotics	37 ± 4	31 ± 2	34 ± 2
Senile Dementia	80 ± 2	82 ± 2	81 ± 1
Old Schizophrenics	68 ± 2	68 ± 2	68 ± 2

[1]Mean. [2]Standard Error. There were 5 men and 5 women per group.

Inasmuch as the adrenal cortex plays a central role in the resistance to stress, it was thought appropriate to use tests of adrenal cortical function as part of our test battery. Both the changes in the circulating eosinophil count and salivary Na/K ratio are known to be under adrenal cortical control and were therefore utilized in the present study. Later it is hoped to report on our experiences with other tests.

Materials and Methods

Five groups of subjects, each consisting of 5 men and 5 women, made up the case material. The groups comprised young subjects without signs of mental disorder, a similar group of elderly persons, young persons with functional psychoses most of them manic depressives in the depressed phase, old patients suffering from schizophrenia and patients with senile dementia. The ages of the various groups are given in Table I.

Blindfolding was applied without prior notice and without prior indication to the subjects of its duration which in actual fact was one-half hour. Samples of veinous blood and saliva were taken immediately prior to the test, immediately after it and 3½ hours later. The blood was collected before the saliva which was of the unstimulated mixed variety normally found in the mouth between meals. The subjects were watched to see that they neither ate, drank, smoked nor napped for an hour prior to the beginning of the test, as these factors were known to influence the salivary Na/K ratio (14). The first sample was taken an hour before lunch. Then the subjects were blindfolded for ½ hour after which the second sample was taken. Then lunch was taken as usual. The last sample was collected in the mid-afternoon. Because both the circulating eosinophils and the salivary Na/K ratio have a diurnal variation, the times selected for the test were those in which there was a minimum variation due to time.

The eosinophils of the blood were stained with phloxine in a propylene glycol solution, and counted in a Fuch-Rosenthal haemocytometer. Sodium and potassium concentrations were determined by a flame photometric technique described elsewhere (14). The blood was stained and counted and the saliva processed on the day the blindfold test was performed.

The significant findings are presented in 2 ways: first, in the form of the raw, mathematically untransformed data; second, as relative data obtained by expressing each result of each subject as a percentage of the mean of the 3 results obtained from that person. This was done to eliminate the considerable variation

in the data from subject to subject, a variation which if not removed, would obscure the effects due to blindfolding or sex.

The data were analysed by analysis of variance including the analysis of the interaction of the various factors involved.

Results

Age of Subjects: (Table I) There was no significant difference in the age of men as compared with women ($P = 1$). However, the age differences between all groups of subjects were significant ($P < 0.01$), except between the senile dementias and normal old persons ($0.30 > P > 0.20$).

Circulating Eosinophils: *Raw Values* (Table 2) Young patients with functional psychoses had significantly higher raw values than normal old persons ($0.02 > P > 0.01$). However, differences between young persons with functional psychoses and normal young subjects or old persons with senile dementia were of borderline significance ($0.10 > P > 0.05$), while such differences between the other groups were not significant. The differences between the various groups appeared larger in females than males, but this discrepancy was not significant ($0.20 > P > 0.10$). Also, women did not have significantly higher raw counts than men ($P > 0.20$).

Relative Values (Table 3): Taking all the groups together, there was a significant discrepancy in the way men and women responded to blindfolding ($0.05 > P > 0.01$). The men failed to show a significant response ($P > 0.10$). However, women tended to show a fall which was of borderline significance immediately after blindfolding ($0.10 > P > 0.05$) but significant 3 hours later ($0.05 > P > 0.02$).

Regarding the various groups, the relative values showed that a significant eosinopenia occurred in normal young persons immediately after blindfolding ($0.05 > P > 0.02$), with a return to normal 3 to 4 hours later. Senile dementia patients showed no significant decline in circulating eosinophils immediately after blindfolding ($0.20 > P > 0.10$), but 3 to 4 hours later the decline was statistically significant ($P > 0.001$). The eosinopenia as a result of blindfolding was greater in this than in any other group. These responses to blindfolding occurred both in men and women. The remaining 3 categories of subjects showed no significant change in the circulating eosinophils as a result of blindfolding.

Salivary Sodium/Potassium: *Raw Values* (Table 4): Subjects with senile dementia and old schizophrenics had significantly higher raw values than young patients with functional psychosis or young and old normals ($P < 0.01$). Women tended to have lower values than men in four of the five groups, but the difference was not significant ($0.20 > P > 0.10$). However, in the group of old schizophrenics, women had the higher values and this discrepancy between this group and the remaining four groups was significant ($0.01 > P > 0.001$).

Relative Values: (Table 5) Normal young persons showed a significant increase immediately after blindfolding ($0.02 > P > 0.01$), with return to normal 3 to 4 hours later. Old schizophrenics showed a significant decline immediately after blindfolding ($0.05 > P > 0.02$) with a tendency to remain low 3 to 4 hours later ($0.05 > P > 0.02$). All other groups showed no significant change as a result of blindfolding. The sexes did not show different responses of their Na/K ratios after blindfolding ($0.20 > P > 0.10$).

If we consider the five groups individually we find that young normals showed initially a normal eosinophil count with a significant decline as im-

TABLE 2: THE EFFECT OF BLINDFOLDING ON THE ABSOLUTE CIRCULATING EOSINOPHIL COUNT (Number/cu.mm.) OF YOUNG AND OLD NORMAL AND PSYCHOTIC SUBJECTS

GROUPS	MEN			WOMEN			MEN AND WOMEN		
	A	B	C	A	B	C	A	B	C
Young Normals	177[1] ± 63[2]	107 ± 43	146 ± 50	98 ± 16	89 ± 28	122 ± 21	138 ± 33	98 ± 24	134 ± 26
Old Normals	96 ± 27	81 ± 25	122 ± 50	84 ± 17	89 ± 17	81 ± 24	90 ± 15	85 ± 15	102 ± 27
Young Psychotics	200 ± 46	227 ± 58	241 ± 68	305 ± 121	247 ± 124	274 ± 123	253 ± 64	237 ± 64	258 ± 66
Old Schizophrenics	150 ± 63	102 ± 36	87 ± 32	210 ± 92	248 ± 151	214 ± 120	180 ± 53	175 ± 77	150 ± 62
Senile Dementia	169 ± 54	139 ± 50	113 ± 44	139 ± 25	138 ± 19	62 ± 23	154 ± 29	138 ± 25	87 ± 25

A – Before blindfolding.
B – Immediately after blindfolding.
C – 3 to 4 Hours after blindfolding.

[1]Mean. [2]Standard error.
There were 5 men and 5 women per group.

TABLE 3: THE EFFECT OF BLINDFOLDING ON THE RELATIVE CIRCULATING EOSINOPHIL COUNT (Percentage) OF YOUNG AND OLD NORMAL AND PSYCHOTIC SUBJECTS

GROUPS	MEN			WOMEN			MEN AND WOMEN		
	A	B	C	A	B	C	A	B	C
Young Normals	120.0± 5.8[2]	82.4± 13.7	97.5± 8.8	100.3±11.3	79.3±18.5	120.3± 7.6	110.2± 6.8	80.9±10.8	108.9±6.7
Old Normals	101.6±11.5	86.6± 8.0	111.9±16.6	100.6± 6.4	107.9± 5.5	91.5± 6.4	101.1± 6.2	97.3±5.8	101.7±9.0
Young Psychotics	91.8± 6.8	101.9± 4.9	106.3± 2.9	116.7± 9.8	86.4±10.4	96.9± 8.4	104.2± 6.9	94.2± 6.0	101.6±4.4
Old Schizophrenics	97.9±26.2	108.6±12.6	93.5±14.4	114.8±11.4	81.0±22.1	101.3±12.9	106.3±13.8	96.3± 1.3	97.4±9.2
Senile Dementia	131.0±10.3	95.1± 4.4	73.8± 9.4	121.4± 8.2	125.8± 9.6	49.8±12.8	127.7± 6.3	110.5± 7.1	61.8±8.5

A – Before blindfolding.
B – Immediately after blindfolding.
C – 3 to 4 Hours after blindfolding.

[1]Mean. [2]Standard error.
There were 5 men and 5 women per group.

mediate response to the stress and a return to normal after 3 to 4 hours. Their salivary Na/K ratio which also was normal initially showed a significant increase immediately after stress and a return to normal 3 to 4 hours later.

Old normals had a low initial eosinophil count and no significant change after the stress, neither immediate nor delayed. Their salivary Na/K ratio was normal initially with no change after stress.

Young persons suffering from functional psychoses had a high eosinophil count before the stress but no change after it. Their salivary Na/K ratio was normal before the stress and did not show any change after it.

Patient's with senile dementia showed normal eosinophil values before the stress, no immediate change after it but a significant decline 3 to 4 hours later. Their salivary Na/K ratio was high initially and did not show any change after the blindfold stress.

Old schizophrenics had normal eosinophil values before the stress, with no change after it. Their salivary Na/K ratio, however, was high before the stress and showed a significant decline immediately after blindfolding and again 3 to 4 hours later.

Discussion

The number of subjects used in our investigation is admittedly small, particularly if we consider the individual groups. Our study, therefore, is to be considered a preliminary one requiring confirmation on a larger material. The fact, however, that the diagnosis of the subjects was well established, the groups properly matched as to sex and the differences obtained statistically reliable lends some justification to a discussion of our findings.

The reasons why blindfolding was chosen as a test in this preliminary study have been mentioned above. It was clear from the test behaviour of most of the subjects that the experience of blindfolding as conducted in the present study was stressful to them. Many of the subjects kept complaining of having the blindfold on with frequent probing questions as to when it would be terminated. Indeed 2 subjects removed the blindfold themselves within the first 10 minutes and refused to continue with the experiment. There was therefore in the experimental situation a considerable degree of awareness of stress which is reported to influence adrenal cortical function (15). Moreover, a similar study in which psychological tests were taken before and after blindfolding for one-half hour revealed that the subjects had indeed undergone stress. These results are being reported in a separate paper (16).

That the change in the level of the circulating eosinophils is being controlled by adrenal cortical hormones has been shown in numerous studies. It is well known that stress in normal animals causes an eosinopenia but this phenomenon is not observed in bilaterally adrenalectomized animals (17). Moreover, persons with intact adrenal cortical function present a diurnal variation in the circulating eosinophils, but patients with Addison's disease, bilateral adrenalectomy or hypopituitarism do not show this diurnal rhythm (18). In these studies, the corticoids of the sugar-active type (that is, those with an oxygen at the C-11 position) were shown to be effective, but not the salt-active corticoids. In fact, a bio-assay based on the circulating eosinophil counts and sensitive to small amounts of the sugar-active corticoids has been developed (19, 20).

The salivary Na/K ratio has also been shown to be dependent on the adrenal cortex. Thus, ACTH administration has been shown to decrease the salivary

TABLE 4: THE EFFECT OF BLINDFOLDING ON THE ABSOLUTE SALIVARY Na/K OF YOUNG AND OLD NORMAL AND PSYCHOTIC SUBJECTS

GROUPS	MEN			WOMEN			MEN AND WOMEN		
	A	B	C	A	B	C	A	B	C
Young Normals	0.27[1] ±0.04[2]	0.35±0.05	0.31±0.05	0.21±0.03	0.23±0.03	0.18±0.02	0.24±0.02	0.29±0.03	0.25±0.03
Old Normals	0.32 ±0.11	0.25±0.05	0.30±0.10	0.20±0.04	0.20±0.04	0.19±0.04	0.26±0.06	0.23±0.03	0.25±0.05
Young Psychotics	0.27 ±0.03	0.32±0.03	0.27±0.03	0.27±0.04	0.28±0.05	0.28±0.04	0.27±0.02	0.30±0.03	0.27±0.02
Old Schizophrenics	0.34 ±0.03	0.32±0.04	0.31±0.03	0.48±0.07	0.39±0.07	0.39±0.06	0.41±0.04	0.35±0.04	0.35±0.04
Senile Dementia	0.36 ±0.04	0.42±0.07	0.41±0.09	0.38±0.09	0.30±0.09	0.39±0.11	0.37±0.05	0.36±0.05	0.40±0.07

A – Before blindfolding.
B – Immediately after blindfolding.
C – 3 to 4 Hours after blindfolding.

[1]Mean. [2]Standard error.
There were 5 men and 5 women per group.

TABLE 5: THE EFFECT OF BLINDFOLDING ON THE RELATIVE SALIVARY Na/K RATIO (Percentage) OF YOUNG AND OLD NORMAL AND PSYCHOTIC SUBJECTS

GROUPS	MEN			WOMEN			MEN AND WOMEN		
	A	B	C	A	B	C	A	B	C
Young Normals	86.6[1] ±6.4[2]	113.7±8.9	99.7±5.6	100.6± 2.7	112.6± 4.4	87.3± 3.2	93.3±4.0	113.2±4.6	93.5±3.4
Old Normals	104.6 ±7.3	96.6±8.9	98.7±5.5	98.3± 2.1	103.5± 3.1	98.1± 3.9	101.5±4.0	100.1±4.5	98.4±3.2
Young Psychotics	94.7 ±6.3	111.2±6.0	94.1±9.0	97.8± 3.1	99.9±10.8	102.4±12.9	96.2±3.4	105.5±6.1	98.3±7.6
Old Schizophrenics	107.1 ±5.9	97.7±7.1	95.2±4.0	114.8±12.4	91.4± 7.2	93.8± 5.8	110.9±6.6	94.6±4.8	94.5±3.3
Senile Dementia	94.2 ±5.9	102.6±8.1	103.2±8.9	110.4±10.4	85.3± 5.3	104.2± 9.3	102.3±6.3	93.9±5.4	103.7±6.0

A – Before blindfolding.
B – Immediately after blindfolding.
C – 3 to 4 Hours after blindfolding.

[1]Mean. [2]Standard error.
There were 5 men and 5 women per group.

Na/K in normal subjects (21-26), but not in patients with Addison's disease (23). Desoxycorticosterone has been shown to decrease the salivary Na/K of normal subjects (23) and in patients with Addison's disease (27). Furthermore, the Na/K of the saliva was higher in patients with Addison's disease and lower in patients with Cushing's disease than in normal subjects (23). Finally, under non-stressful conditions, normal subjects show a diurnal variation in the salivary Na/K ratio which parallels that of the circulating eosinophils (28).

In this connection, it was of interest to note that in our study the parallelism between the salivary Na/K ratio and the circulating eosinophil count normally observed under non-stressful conditions, was disrupted, inasmuch as the immediate response of the normal young persons to blindfolding was a statistically significant decline in the circulating eosinophils and a statistically significant increase in salivary Na/K ratio.

Numerous studies have shown that the relationship between the salivary Na/K ratio and the circulating eosinophils on the one hand and the level of adrenal cortical activity on the other was an inverse one. That is, a decline in the salivary Na/K ratio indicates that an increased output of salt-active corticoids has occurred, while a rise in the salivary Na/K ratio indicates a decreased secretion of these hormones. The same relationship exists between the circulating eosinophils on the one hand and the sugar-active corticoids on the other. Furthermore, from the fact that both the salivary Na/K ratio and the circulating eosinophils in persons with daytime occupations show a pronounced fall between the early hours in the morning before getting out of bed and later in the morning (14) it would appear that the output of both the sugar- and salt-active corticoids increase in parallel fashion at this time. On the other hand, when normal young persons are stimulated by a stress as shown in our study the immediate response appears to be a sharp increase in the output of the sugar-active corticoids (as evidenced the statistically significant fall in eosinophils) accompanied by a sharp decrease in the output of the salt-active corticoids (as evidenced by the statistically significant rise in the salivary Na/K ratio). It would be useful to repeat these studies by noting the effect of blindfolding on the serum level of sugar-active and salt-active corticoids.

The present study revealed that only normal young subjects and senile dementia patients responded to blindfolding with a statistically significant change in the level of the circulating eosinophils. The remaining 3 groups did not. However, the pattern of change was different in the normal young patients and in the senile dementias. In the former, there was an immediate eosinopenia with a return to normal 3 to 4 hours later, while in the senile dementia patients there was no immediate response, but there was a very marked eosinopenia 3 to 4 hours later. From the inverse relationship between the change in the level of the circulating eosinophils on the one hand, and the output of sugar-active corticoids on the other, it would appear that normal young people react to a stress such as blindfolding by an immediate increase in the output of the sugar active corticoids with a return to normal 3 to 4 hours later. On the other hand, in the senile dementia patients there is no immediate change in the output of sugar-active corticoids but there is a markedly increased output 3 to 4 hours after blindfolding. It is interesting to note that our group of old schizophrenics did not show a change in the level of the circulating eosinophils as a result of blindfolding. This would suggest that in this group no significant increase in the output of sugar-active corticoids occurred after the stress. Although this method of measuring eosinophils 3 to 4 hours after blindfolding could be used as a

biological test for distinguishing between old schizophrenics and patients suffering from senile dementia, clinically this test would appear to have little value as there is usually no difficulty in distinguishing an elderly schizophrenic from a senile dementia patient on clinical grounds.

An interesting finding was the fact that even without blindfolding the salivary Na/K ratio was very significantly higher in old schizophrenics and in senile dementia patients than that of young and old normals. However, there were no such differences in the circulating eosinophils between the elderly mentally disturbed patients and the young and old normals. This suggests that the salt-active, but not the sugar-active, function of the adrenal cortex is deficient in the two groups of elderly psychotics. This, however, was not due to age alone because the old normals did not show this phenomenon, nor was it due to their psychosis alone because the young patients with functional psychosis also failed to show an elevated Na/K ratio. Apparently, the combination of both the advanced age of the subjects and their psychosis was responsible for the elevated Na/K ratio. The presence of an elevated Na/K in elderly patients suffering from a psychosis is similar to that observed in some patients suffering from Addison's disease.

Only 2 of the 5 groups showed a significant change in the salivary Na/K ratio as a result of blindfolding: the normal young subjects showed a statistically significant increase immediately after blindfolding with a return to normal 3 to 4 hours later. On the other hand, old schizophrenics showed the very opposite pattern: that is, a statistically significant decline with no return to normal 3 to 4 hours later. From the inverse relationship between the salivary Na/K on the one hand and the output of salt-active corticoids on the other, it would appear that normal young persons react with a decreased output of salt-active corticoids immediately after blindfolding, while old schizophrenics react with an increased output of salt-active corticoids. The method of determining the salivary Na/K ratio immediately after blindfolding would appear to be of value in distinguishing senile dementia from schizophrenia in elderly subjects. The former do not show any change, whereas the latter group shows a decline both immediate and delayed after the stress. Combined with the eosinophil count made 3 to 4 hours after blindfolding, it would appear that these studies have provided a new biological way of distinguishing these 2 types of mental disease in older subjects.

The test results obtained in our group of young normals seems to indicate that this group reacts to the stress of blindfolding of one half hour duration with an immediate increase in the output of the sugar-active and an immediate decrease in the output of the mineralo-corticoids. Both changes seem to revert to the pre-stress level 3 to 4 hours after the stress. In contrast to this the results in the group of normal old persons did not indicate any change in either the mineralo- or the sugar-active corticoids to the stress applied in our experiments. The group of senile patients showed results indicative of a delayed increase in the output of sugar-active corticoids but not of the mineralo-corticoids. The third group of old people, namely the group of old chronic schizophrenics, showed results indicative of an increased output of mineralo-corticoids but no change in the sugar-active corticoids.

As far as it is possible to draw conclusions from our small material, our results would indicate that the adrenal cortex in old persons is less responsive than in the younger age group but that a psychosis, for instance, a senile dementia can still influence the adrenocortical response of the older age group to a certain and limited extent.

Summary

Five groups of subjects (normal young persons, normal old persons, young persons with functional psychosis, persons with senile dementia and old schizophrenics), each comprising 5 men and 5 women, were blindfolded for one half hour. Samples of blood and saliva were taken immediately before, immediately after and 3½ hours after blindfolding. The sodium-potassium ratio was determined in the saliva and the number of eosinophils was counted in each sample of blood.

Prior to blindfolding, young persons with functional psychoses had the highest eosinophil count of all the subjects, the counts of this group being significantly higher than those of normal old persons. Moreover, differences between the former group and normal young subjects or old persons with senile dementia were of borderline significance. In response to blindfolding, normal young subjects showed a significant eosinopenia, as did also the senile dementia patients. However, in the former case, the eosinopenia was apparent immediately after blindfolding, but not 3 to 4 hours later. The senile dementia patients on the other hand presented no immediate eosinopenia but showed a very significant change 3 to 4 hours later. The remaining groups showed no significant change in the number of circulating eosinophils in response to blindfolding.

In the case of the salivary Na/K ratio the senile dementia and elderly schizophrenic subjects had significantly higher values than the other groups prior to blindfolding. In response to blindfolding, the normal young subjects showed a significant increase in the Na/K immediately after blindfolding with a return to normal 3 to 4 hours later. On the other hand, old schizophrenics showed a significant decline immediately after blindfolding with a persistence of low values 3 to 4 hours later. All other groups showed no significant change as a result of blindfolding.

These studies provided physiological tests for distinguishing senile dementia from schizophrenia in elderly psychotics. Also, because of the inverse relationship between the change in the level of the circulating eosinophils and salivary Na/K ratio on the one hand and the change of the level the sugar- and salt-action hormones of the adrenal cortex on the other, it is suggested that the elderly schizophrenic reacts to blindfolding by an immediate increase in the output of salt-active corticoids, while the senile dementia patients reacts to the same stress by a delayed increase in the output of sugar-active corticoids.

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Résumé

Cinq groupes de sujets (individus normaux jeunes, individus normaux âgés, individus jeunes atteints de psychose fonctionnelle, individus atteints de démence sénile et schizophrènes âgés), chacun comprenant 5 hommes et 5 femmes, eurent les yeux bandés pendant une demi-heure. Des échantillons de sang et de salive furent pris immédiatement avant, immédiatement après et 3½ heures après le test. Le rapport sodium-potassium fut déterminé dans la salive et le compte des eosinophiles fut fait dans chaque échantillon de sang.

Avant de bander les yeux aux différents sujets, les personnes jeunes atteintes de psychose fonctionnelle avaient le plus haut compte d'eosinophiles et ce compte était de beaucoup supérieur à celui des personnes âgées normales; pour ce qui est

des autres groupes la différence n'était pas tellement marquée. En réponse au test les sujets jeunes et normaux ont montré une eosinopénie marquée de même que le groupe des déments séniles. Cependant, dans le premier cas, l'eosinopénie était apparente immédiatement après le test, mais ne l'était plus trois ou quatre heures plus tard. Les patients souffrant de démence sénile ne présentaient aucune eosinopénie immédiate mais le changement était beaucoup plus significatif 3 ou 4 heures plus tard. Les autres groupes n'ont montré aucun changement appréciable dans le nombre des eosinophiles.

Pour ce qui est du rapport sodium-potassium dans la salive, la démence sénile et la schizophrénie chez les gens âgés avaient des valeurs beaucoup plus élevées que chez les autres groupes avant le test. En réponse au test les sujets normaux jeunes montrèrent une augmentation marquée du rapport sodium-potassium immédiatement après le test avec un retour vers la normale trois ou quatre heures plus tard. D'autre part, les schizophrènes âgés montrèrent une diminution marquée immédiatement après le test avec persistance de cette diminution trois ou quatre heures après. Les autres groupes ne présentaient aucun changement significatif comme résultat du test.

Ces études démontrent des tests physiologiques pour distinguer la démence sénile de la schizophrénie chez les psychotiques âgés. De plus, à cause de la relation inverse entre le changement dans le taux des eosinophiles circulant et le rapport sodium-potassium de la salive d'une part, et le changement dans le taux des glucocorticoides et des minéralocorticoides d'autre part, cette étude suggère que les schizophrènes âgés réagissent, lorsqu'ils se font bander les yeux, par une augmentation immédiate sur le débit des minéralocorticoides, tandis que les déments séniles réagissent au même stress par une augmentation retardée sur le débit des glucocorticoides.

REPORT OF THE CANADIAN PSYCHOANALYTIC SOCIETY SOCIETE CANADIENNE DE PSYCHANALYSE

1637 Sherbrooke Street West, Montreal

Executive Council (1959). Dr. J. B. Boulanger, president; Dr. J. Aufreiter, vice-president; Dr. W. C. M. Scott, secretary; Mr. A. Lussier, treasurer; Drs. A. W. MacLeod and M. Prados, councillors.

Training Activities. Nineteen candidates are in training under the auspices of the Society, ten attending, since the fall of 1959, the second year course of lectures and seminars.

Scientific Meetings (1959)

(January 15th). Presentation and discussion of Norman McLaren's selected cartoons.

(February 19th). "A Case of a Schizophrenic Girl", by Dr. J. Aufreiter.

(February 28th). Joint panel discussion with the psychiatric section of the Montreal Medico-Chirurgical Society and the Société Canadienne d'Etudes et de Recherches Psychiatriques on "Pregnancy and Parturition —Grossesse et accouchement", (Drs. Boulanger, MacLeod and Scott).

(March 19th). "Ego Problems in Psychoanalytic Technique", by Dr. N. B. Epstein.

(Toronto, May 16th). "The Fringe of Psychosis". (Fourth Françoise Boulanger Memorial Lecture), by Dr. G. Bychowski (New York).

(May 27th). "The Creative Trance" (Preliminary Report), by Dr. B. Ruddick (New York).

(September 10th). "Primary Love", by Dr. M. Balint (London, Eng.).

(September 23rd). "Psychothérapie et psychanalyse", by Dr. J. B. Boulanger; "Considérations psycho-dynamiques sur un cas de malformation congénitale", by Mr. A. Lussier; "Les angoisses et les défenses chez l'enfant déprimé", by Dr. T. Statten. (Annual Convention of the Association des Médecins de Langue Française du Canada).

(October 3rd). "The Influence of Primary Identification", by Dr. A. Parkin (Toronto).

(October 15th.) "Present Day Reality and the Therapeutic Goal", by Dr. R. Sterba (Detroit).

(October 16th). "Affects in Terms of Drives, Ego and Self Object —A Development Perspective", by Dr. G. L. Engel (Rochester, N.Y.).

(November 19th). Discussion of two papers: "Depression, Confusion, Multivalence", by Dr. W. C. M. Scott; "Psychoanalytic Comments on the Psychology and Psychotherapy of Depression", by Dr. W. Hoffer.

(December 17th). "Clinical Vignettes", by Dr. J. Aufreiter and Mr. A. Lussier.

CONSIDERATIONS SUR LA SCHIZOPHRENIE DES RURAUX

Dr Gilles Paul-Hus, F.R.C.P.(C)

Il n'est pas sûr que la schizophrénie soit une seule et même maladie: on parle plus volontiers aujourd'hui du groupe des réactions schizophréniques.

Il n'y a pas non plus de constante biologique ou structurale admise dans ces conditions.

L'hypothèse de travail généralement acceptée est la suivante: on doit rechercher les causes de la schizophrénie dans les limites de la capacité d'adaptation.

La vie rurale introduit une variante quant au conditionnement infantile, aux systèmes de sécurité élaborés, aux valeurs de base acceptées. Il nous a semblé intéressant de comparer la production de la schizophrénie tant dans la société rurale que dans la société urbaine.

Il s'agit forcément d'une étude préliminaire: car assez rapidement sont apparues les difficultés d'une telle observation et nous avons dû nous limiter à l'examen sommaire du schizophrène dans la société rurale.

Après un aperçu de la dynamique de groupe de la société rurale, nous verrons ce que révèle l'histoire sociale des schizophrénies dans ce milieu.

Dans un dernier temps, nous dégagerons quelques constatations susceptibles d'améliorer le traitement de ces malades.

La société rurale

La condition rurale est historiquement et logiquement la condition de base d'une société. En effet pour que la ville existe, il faut qu'une partie de la société produise plus de nourriture qu'elle n'en consomme.

La culture rurale est une culture d'une société étroitement unie, petite, isolée dans laquelle les relations de personne à personne prévalent et le sentiment d'appartenir au milieu, d'avoir un lien de parenté avec tous, est dominant. Par ailleurs, les institutions politiques sont peu développées. C'est une démocratie primitive où il y a coexistence d'un maximum d'égalité combiné à un minimum d'autorité et de contrôle. Un tel mode fonctionne car il y a une forte intégration du petit groupe concerné; tous se connaissent et la plupart sont parents ou alliées.

C'est la petitesse de l'unité sociale qui tient la population rurale homogène et uniforme avec très peu de spécialisation et de division du travail. Les ruraux sont attachés à la terre tant par des liens émotionnels que par des liens économiques. En conséquence ils s'identifient avec force à leur coin de terre où ils sentent que sont fixées leurs racines.

Le sens moral et religieux de même que les croyances magiques sont plus fortes chez eux que chez les urbains. Ils croient davantage dans les choses sacrées; leur sens du bien et du mal nait de racines inconscientes de sentiment social, d'où irraisonné, compulsif, fort.

La culture rurale demande à ses membres une participation totale qu'en même temps elle encourage et stimule. Le fonctionnement de l'individu quoique limité, incomplet, inadéquat demeure satisfaisant et personnel. La pauvreté du milieu culturel, la participation étroite des membres et la limitation des buts; tout tient lieu de patterns mieux définis.

Le choix des malades

En étudiant les réactions schizophréniques en milieu rural, trois possibilités nous étaient offertes.

La première: beaucoup de jeunes ruraux à l'âge de 15, 16 ans sont déplacés vers la ville par leur études, le travail ou le déménagement des parents; quelques années plus tard éclate la schizophrénie.

Inversement, il y a eu entre 1930 et 1938 une certaine émigration vers les campagnes et plusieurs jeunes ont pu se trouver mésadapté de ce changement. L'élément stress de changement de milieu et d'habitudes nous fait écarter ces deux formes d'appatition de la schizophrénie pour étudier les ruraux qui déclanchent leur psychose ayant toujours vécu en milieu rural.

Bilan medical et développement mental

La multiplicité des enfants rend le plus souvent les parents incapables de préciser les anomalies de développement dans les sphères physique et psychique. Les maladies contagieuses sont signalées assez bien mais on évoque de façon générale que tous les autres enfants de la lignée les ont eu.

De façon générale, il n'y a guère d'hospitalisation avant l'avénement de la psychose. On soulignera parfois que très tôt il n'était pas comme les autres.

D'après le faible échantillon prélevé, toute la lignée est vulnérable à la schizophrénie: seulement des études démographiques plus poussées pourraient nous permettre d'isoler une vulnérabilité spéciale.

La personnalité du futur schizophrène est décrite comme timide, repliée. Un type qui a peu d'amis qu'il visite rarement le samedi et le dimanche. Il fréquente encore moins les jeunes filles. On note un alcoolisme épisodique de fin de semaine fait dans une tentative d'affirmer une certaine virilité ou de restaurer des ponts sociaux faibles. Le facteur héréditaire est assez fort en comparison avec la classe urbaine. Deux explications possibles: d'abord les mariages entre parents sont plus fréquents et les familles se connaissent mieux, conservent de meilleurs contacts entr'eux, peuvent mieux suivre les allées et venues du clan.

La scolarité

L'éloignement de l'école rurale, les besoins des semailles et des récoltes, les troubles de communication, la classe unique où tous les élèves sont assemblés font souvent que la scolarité est réduite au minimum soit à la cinquième ou sixième année.

Pas de lectures après la classe et peu de fréquentations d'école d'agronomie ou de cours spécialisés: ce qui fait une culture réduite. Du point de vue thérapeutique, les méthodes psychologiques, si elles ne sont pas totalement contr'indiquées sont difficiles. Le niveau de communication demeure simple, superficiel; la discussion des attitudes émotionnelles du patient et de ses parents est très laborieuse et les guérisons avec insight i.e. avec une certaine compréhension des processus morbides sont très rares.

Le travail

Il est d'ordinaire mixte. Il est fermier, engagé sur la terre du printemps à l'automne avec travail de bûcheron ou urbain, durant la saison hivernale. Pour les cultivateurs d'Abitibi, il y a parfois labeur dans les mines quelques accidents psychotiques déclanchés dans les camps de bûcherons ou dans les mines: est-ce l'isolement du malade, l'éloignement de sa famille, la fatigue intense, le stress de la promiscuité ou encore la hâche qui stimule les pulsions agressives du schizophrène en évolution, peut-être tous les facteurs ensemble. D'ordinaire, l'adaptation au travail est assez bonne jusqu'à la psychose chez les paranoides et les catatoniques, pauvres dans les formes simple et hébéphrénique.

La maladie est considérée comme quelque chose d'exogène comme un poison qui a pénétré l'organisme, comme un accident qui traumatise de l'extérieur. Le malade se sent accablé, mais ne se rend pas responsable de cette situation maladive qu'il sent imposée de l'extérieur. Lui-même et ses proches acceptent avec diffi-

cultés de relier les éléments de la psychose à des tensions psychologiques du milieu familial ou du patient lui-même.

Le mode de début est rarement attribué à une cause émotionnelle: quelque accident, de la fatigue, du surmenage est vu comme le "primum movens". Parfois on mentionnera un chagrin amoureux, comme facteur déclanchant de la schizophrénie. Si vous poussez l'enquête un peu plus loin, vous verrez que le type n'a vu la jeune fille qu'une fois, qu'il l'a invitée et qu'elle a dit non; cela satisfait la famille comme raison suffisante de déclanchement de sa maladie.

La psychose

Le milieu culturel rural se projette bien dans les communications délirantes du schizophrène. L'influence religieuse y est particulièrement marquée.

Un tel prétend qu'il peut chanter la messe comme un prêtre, se dit le deuxième Bon Dieu, fait des sermons à sa famille, les accuse de la mort de Jésus-Christ.

Un autre se croit damné, ceci ne l'empêche pas d'avoir des visions de la Ste Vierge et du Bon Dieu, du diable, et d'affirmer qu'il a un ostensoir dans l'abdomen et des images saintes dans l'estomac. Et celui-ci qui, persécuté par tous ses voisins, jeûne veut aider les pauvres, construire des églises et clame partout que les gens doivent faire pénitence.

Et cet autre encore qui fait des miracles, récite des rosaires de façon constante pendant qu'à la radio et la télévision, le monde entier l'admire et l'écoute. D'autres exemples: ce jeune schizophrène qui persécuté, accusé de meurtre et menacé de mort se sent comme Notre-Seigneur à l'agonie. Et cette femme qui passe sa journée les bras en croix, jeûne, se mortifie et est gratifiée de visions de la Vierge, elle demeure assez pratique pour attacher son mari au lit conjugal par la jambe, de peur que la nuit, il ne lui soit infidèle.

Comme on peut le voir, la religion prend une part importante et se mêle chez les schizophrènes, à leurs idées de grandeur, à leur sentiment de culpabilité, à leur estime personnelle.

Les idées de persécution sont d'ordinaire moins élaborées dans la société rurale. Le schizophrène ne peut préciser qui lui en veut, pourquoi on le persécute. Il ne peut s'expliquer ce qui arrive et sa projection sur autrui demeure vague, peu construite. Il n'y a pas de patron, guère de gendarmes ou de criminels sur qui se projeter. Contrairement à ce qui se passe chez les paysans normands, on a peu noté de délire de revendication à propos de terrain et de bornage.

Les idées de grandeur sont presque toujours liées à la religion: quelques exceptions bizarres; un tel se prétend un fameux ingénieur, un autre se dit le roi de l'électricité.

Parmi les stéréotypies, on note des mouvements primitifs de saut et de danse, difficiles d'interprétation.

Attitude des parents

De façon générale, le milieu rural est plus acceuillant et plus tolérant pour le malade mental. A ce point de vue, la réception et l'expectative des parents est beaucoup plus favorable que pour le schizophrène retournant dans un milieu urbain. L'éloignement des fermes, la grandeur du domaine familial, l'emphase sur un travail assez souvent solitaire et non spécialisé et ne nécessitant pas de communication ni profonde ni subtile, permettent au schizophrène s'il montre une certaine capacité, de travail de se réhabilliter.

La famille rurale a aussi plus de facilités pour placer le schizophrène par exemple marié. Il y a toujours sur une des terres paternelles, une petite maison dont on peut disposer et qui protégera le malade timide et soupçonneux.

Conclusion

De l'ensemble du travail se dégagent quelques données:

1° Le contenu culturel pauvre et la scolarité réduite rendent aléatoires les thérapies d'inspiration psychanalytique et psycho-thérapeutique.

2° La réception cordiale de la famille et le travail tout trouvé devraient nous inciter à retourner rapidement chez lui le rural après sa phase de psychose aigue terminée.

3° Les idées religieuses du schizophrène en milieu rural peuvent masquer son délire et un examen plus attentif de ces dites idées faciliterait l'exploration des désordres de leur personnalité.

4° La désorganisation hébéphrénique chez les ruraux rétrocède rapidement et n'a pas nécessairement un pronostic plus sombre que la réaction paranoide.

5° L'hérédité semble plus marquée chez eux car les familles se connaissent mieux et les mariages entre proches sont plus fréquents. Rien ne prouve qu'elle soit plus agissante: on la connait mieux, c'est tout.

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Summary

This is a preliminary study about the schizophrenic reaction as produced and developed among French Canadian farmers.

After a brief summary of human functioning in this subculture, we have examined at St-Jean de Dieu Mental Hospital the social history of young schizophrenic farmers, paying special attention to the following areas: mental development, physical illnesses, schooling, work, delusional material and ideas of reference, parental acceptance or rejection.

After a psychosexual and physical development considered as normal by the family, the young schizophrenic quits school after the 5th grade. Described as shy but hard working, he is known to drink heavily during the week end: usually he does not mingle with girls.

The importance of religion in his "milieu" is evident if you consider the unusual amount of religious material in the delusions and the ideas of reference and grandeur of the patient. Identification to God whether in His sufferings or His triumph is quite frequent. When recovered from the acute phase of psychosis, the young schizophrenic is well received by his family.

In brief some preliminary conclusions are drawn.

1) Psychoanalytic treatment and deep psychotherapy are not usually indicated or successful in dealing with his disintegrating ego.

2) So far as the acute phase is cleared by biological treatment, the patient should be returned home rapidly.

3) His religious ideas should be more carefully scrutinized to get a better understanding of his emotional problems.

4) A hebephrenic reaction does not necessarily indicate a poorer prognosis than a paranoid one.

5) Heredity seems better known among them, not especially more productive of schizophrenia.

OBSERVATION D'UN AN AVEC IMIPRAMINE* EN CLINIQUE PSYCHIATRIQUE A L'HOPITAL GENERAL

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"PRIMUM EST NON NOCERE"

La venue du thymoleptique, Tofranil, a été accueillie avec beaucoup d'enthousiasme tant par ceux qui sont versés dans l'art et la science psychiatrique que par ceux qui, par pure spéculation ou par la pratique réaliste quotidienne, ont des contacts directs ou indirects avec le malade mental.

Avec le recul d'une année qu'il nous soit permis de donner le point de vue du clinicien sur l'efficacité du Tofranil dans le traitement des états dépressifs.

Nous préciserons d'abord l'aspect clinique de tels états, nous abstenant ici de toute considération dialectique et sociatrique, puis après avoir mentionné nos résultats nous conclurons quant aux propriétés de la nouvelle drogue, mettant en parallèle avantages et inconvénients éventuels dans son emploi en clinique hospitalière et pratique générale.

Critéres diagnostiques

Préconisé comme antidépressif, nous avons donc réservé le Tofranil à nos déprimés, ayant pris connaissance des résultats de Kuhn, assez concluants pour nous inciter à penser que les traitements de chocs dans certains cas bien précis ne seraient plus la seule arme offerte au spécialiste pour le bien de son malade.

Mais qu'est-ce qu'un déprimé? Tout malade qui souffre et à plus forte raison le malade qui souffre moralement, n'a-t-il pas raison d'être déprimé? Pour le grand public, la dépression est une prise de position de tout l'individu et de sa personnalité à l'égard d'un malaise physique, moral ou social. Mais, le psychiatre fait une distinction: il y a des dépressions maladie et des dépressions maladives réactionnelles.

Hippocrate déjà employait le terme "mélancolie" pour désigner ce qu'empiriquement on appelle: dépression-maladie. Cet état de dépression majeure a des traits caractéristiques; elle est reversible, cyclique et à caractère familial héréditaire. Elle peut se présenter isolée au cours de la vie d'un individu, mais plus souvent elle se répète après une période d'un intervalle libre, et de durée sensiblement le même, bien que certains auteurs prétendent que ce libre intervalle aurait tendance à être plus court chez les personnes traitées aux électrochocs. Dans certains cas, les épisodes dépressifs, alternent avec des épisodes maniaques et il peut y avoir parfois une intervalle libre entre les deux phases. Quoiqu'il en soit, la symptomatologie est répétitive, que ce soit dans un accès dépressif isolé ou que cet accès se répète à intervalle réguliar ou qu'il soit suivi d'épisodes inverses caractéristiques même de la psychose maniaco-dépressive.

Fait primordial, croyons-nous, il importe de préciser l'expression clinique de la maladie puisque malgré la duplicité des formes et des signes, il existe une structure symptomatologique essentielle dans les dépressions majeures, et nous nous en tenons à ces symptômes cardinaux classiques pour poser un diagnostic de "dépression mélancolique".

1° Inhibition psychomotrice.
2° Angoisse dite primaire, parce que immotivée et assaillant l'être comme une vague de fond.
3° Peur craintive, indiscible qui plonge dans une tristesse atteignant toujours l'anxiété.

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4° Egocentrisme, indifférence à toute activité instinctuelle, sociale ou familiale, auto-accusation.

5° La certitude qu'il n'y a rien à faire dans son cas est quasi pathognomonique de cette affection. Le malade est bouleversé, il voit tout en noir, tout semble un obstacle infranchissable. Les idées délirantes sont fréquentes, elles se rapportent en général à des fautes et des peccadilles auxquelles il n'aurait nullement prêté attention antérieurement. Il se dit prêt à prendre la responsabilité des malheurs même internationaux ou des fléaux naturels. L'auto-dépréciation est la règle et le plus grand danger est le suicide.

6° Parallèlement, il y a toujours une perturbation plus ou moins grave des fonctions neuro-végétatives, dont la conséquence sur le plan physique est l'anorexie, l'amaigrissement et une série de symptômes pouvant se confondre avec des crises d'addisonisme ou d'hypopituitarisme. Les épreuves de laboratoire démontrent que les fonctions surrénaliennes ne sont nullement perturbées chez des cas ayant perdu de 60 à 80 livres.

7° Le décours de cette maladie est une autre caractéristique de la mélancolie, état dépressif de type endogène majeur; il ne faut pas ignorer que le début et la fin sont brusques, et qu'il y a un plus grand danger de suicide dans les deux premiers et les deux derniers mois de la maladie, les facteurs peur et anxiété étant assez puissants pour lever l'inhibition de ces malades.

Si nous insistons sur ces symptômes, c'est qu'il y a des états dépressifs majeurs où tous ces éléments cardinaux ne sont pas franchement exprimés par le malade. Le mélancolique parle peu, il faut parfois solliciter ses réponses. Toutefois, il arrive que le tableau varie; parfois, ce sont des idées hypocondriaques qui prédominent dans le tableau clinique, d'autres fois des idées paranoides ou des hallucinations visuo- auditives, ou un délire de négation absolu. La phase de la dépression mélancolique dure de 9 à 13 mois, et au cours de cette période la trame de fond est périodiquement ou continuellement présente, il n'y a pas de dépression stéréotypée, chaque mélancolique a une note tout à fait personnelle.

Dans les dépressions maladives réactionnelles, on ne distingue pas les signes cardinaux précités.

S'il est vrai que le mélancolique ne voit pas la nécessité de consulter le médecin puisqu'il se croit incurable, le déprimé non mélancolique c'est-à-dire souffrant d'une dépression réactionnelle devenue maladive, lui, est avide d'attention, de soulagement et assaillle le médecin. Sa peur et sa crainte sont motivées, sa tristesse est motivée par un évènement et non pas par une cause fictive, l'auto-accusation, si elle existe, n'est que partielle et causée la plupart du temps par l'insécurité ou par une déception plus ou moins consciente. L'anxiété est moins totale mais presque toujours conditionnée par l'insécurité, et l'auto-dévalorisation est fonctionnelle. Le déprimé non mélancolique "se sent fini" alors que le déprimé mélancolique est "fini". Pour lui, c'est devenu une réalité. Le déprimé non mélancolique tente souvent de se suicider, mais se suicide rarement, le cas échéant son suicide est une tentative ratée qui a réussie.

Matériel et méthode

Sur 583 cas hospitalisés dans le service de neuro-psychiatrie de l'hôpital Maisonneuve d'août 1958 à juillet 1959, nous avons sélectionné 88 cas où l'état psychiatrique cadrait bien avec les indications du Tofranil dont 21 cas de "mélancolie pure" ou dépression endogène et 67 cas de dépression réactionnelle.

Dépression endogène

Parmi les cas de dépression endogène, il y avait un cas de syndrome de Cottard, 2 en fin de phase avec fortes idées de suicide et un avec de multiples pré-occupations hypocondriaques, les autres présentaient à des niveaux différents, suivant l'évolution de la maladie dans le temps, la symptomatologie type de la mélancolie.

Parmi ces 21 cas, 7 ont récupéré sans avoir à recourir aux ECT, 7 ont reçu de 6-8 électrochocs et l'un n'en reçut que 3. Le syndrone de Cottard nécessité 8 ECT. Les 2 patients en fin de leur phase mélancolique ne furent traités qu'au Tofranil. Trois de nos malades ayant passé sans transition de la phase mélancolique à la phase maniaque firent l'objet d'une revision de la médication.

Dépression réactionnelle

Les dépressions réactionnelles ou exogènes étaient classifiées comme suit:

32 cas de dépression simple associée à des traits psychonévrotiques mixtes.
5 cas de dépression agitée chez des schizophrènes anciennement traités mais ne présentant pas de symptomatologie schizophrénique active.
18 cas de dépression anxieuse et phobique.
12 cas de névrose avec réaction dépressive.

Résultats

Relativement aux dépressions endogènes, nous constatons que le Tofranil a un excellent effet, car nous obtenons 80% de rémission dans les périodes d'état de la maladie et 100% de résultats en cas de traitement en fin de phase. Les électrochocs sont considérablement diminués. Le maximum fut de 8.

En ce qui concerne les dépression réactionnelles, les résultats quoique moins spectaculaires n'en demeurent pas moins remarquables. Les dépressions reliées à un trouble névrotique ancien ou purement réactionelles sont favorablement influencées. La plupart des malades après un ou deux jours d'hyper-excitation, où selon leurs dires, leur état empire, constatent tout à coup qu'ils ont fait un grand pas, que leur problème semble plus à leur mesure, que leur attitude défaitiste s'est subitement évaporée et au lieu de se sentir accablés par leurs difficultés, celles-ci semblent tout à fait aplanies. C'est là, que la psychothérapie intervenant, nous avons obtenu d'assez bons résultats puisque 24 cas sur 67 ont quitté l'hôpital libérés de toute anxiété ou angoisse et que 20 cas ont été grandement améliorés. Nous n'avons pas eu à recourir à l'insulinothérapie, thérapeutique de longue haleine mais non inefficace, puisque le traitement au Tofranil a été effectif dans un grand nombre des cas.

Posologie

Au début, nous avons administré 25 mg. de Tofranil, 3 fois par jour, mais ayant tenté l'augmentation du dosage avec succès, nous nous en sommes ensuite tenus au dosage plus élevé, nos résultats ayant alors été plus spontanés qu'avec le dosage moins élevé du début. Nous commençons donc par la voie parentérale à 50 mg. 3-4 et même 5 fois par jour, ayant soin de ne jamais donner d'injection hypodermique après 4 hres, Pm, ayant observé une insomnie fréquente chez les sujets sous traitement avec Tofranil. Dans les cas de dépressions endogène ou réactionnelle, si les symptômes dépressifs majeurs sont disparus après la 8e journée, nous continuons le traitement per os à raison de 25 mg. 6 fois par jour pendant plusieurs mois. Dans les cas à symptomatologie mélancolique, si nous constatons qu'il n'y a aucune amélioration, nous instituons en général une série de 5 à 8 électrochocs.

Effets secondaires

Des effets secondaires ont été notés lors du traitement avec Tofranil chez nos malades hospitalisés. Il semble que les propriétés atropiniques du Tofranil soient responsables d'une part de ces effets et que d'autre part ce soit la levée trop brusque de l'inhibition. Dans presque tous les cas, nous avons noté une sécheresse de la bouche qui incitait à un abus de liquide, de la sudation survenant par bouffées et de façon parfois paroxystique (certaines femmes passées la trentaine se sont plaintes de bouffées de chaleur), de la constipation opiniâtre, de l'hypotension orthostatique, de rares épisodes d'oligurie, du prurit et des éruptions fugaces, une certaine paresse vésicale. Chez tous nos malades, nous avons observé une hyperactivité motrice. Si cette hyperactivité associée aux malaises précités incommodait le sujet au point de lui donner l'impression d'avoir empiré, nous la controlions facilement par l'adjonction de 50 mg. de Nozinan, H.S. Ces effets secondaires mineurs cependant ne justifient pas l'arrêt du traitement. Certaines complications majeures peuvent commander un changement radical de thérapeutique pour des états dépressifs. Des cliniciens investigateurs en ont rapporté dans leurs études cliniques et nous en avons observé deux sur les 88 cas de notre étude. Une femme de 36 ans fit une crise de grand mal le deuxième jour du traitement et un homme de 50 ans traité en externe par 25 mg. Q.I.D., durant 5 jours seulement, fit deux crises de grand mal à domicile. Toutefois, aucun E.E.G. ne fut pris dans ces cas.

Deux cas de dépression endogène passèrent brusquement de la phase mélancolique à la phase maniaque. Une femme de 77 ans (antérieurement reconnue comme Hypomaniaque) et un homme de 36 ans. L'adjonction d'ataraxiques maîtrisa ces états. Fait surprenant, au début du traitement on constate une anxiété agitée chez les mélancoliques. Ils ont besoin de s'extérioriser. Ils sont accaparateurs et la levée du barrage inhibiteur est tellement grande et puissante que les idées de suicide sont quelquefois exprimées sans retenue aucune et que le thérapeute est tenté de recourir à l'effet freinateur de l'électrochoc.

Commentaires

Tant en milieux hospitalisés qu'en pratique générale, Tofranil devrait être employé avec prudence lorsqu'il s'agit de dépression endogène où il y a danger de suicide. Le traitement de préférence devrait être institué au département de psychiatrie de l'hôpital où un personnel qualifié surveille le malade. Si la réponse est bonne, le traitement peut se continuer à domicile, en général dès le 15eme jour après l'hospitalisation. Il serait erroné de croire que la sismothérapie est désormais chose du passé. Ce qui est constaté cependant, c'est qu'avec Tofranil le nombre de chocs est considérablement réduit. Là où un minimum de 20 à 25 électrochocs s'imposaient même en fin de phase, 6 à 8 suffisent maintenant, notre maximum fut de 11 chocs. Le Tofranil a diminué de ⅓, selon nous, la moyenne des électrochocs. L'avantage primordial à notre avis est le fait que le déficit-personnalité est moins grave avec l'association Tofranil–ECT–qu'avec les électrochocs seuls. Sans doute, la chimiothérapie influence le substratum anatomique et nous porte à regarder de plus près la pathologie des états mentaux. Si les ataraxiques ont été une innovation en psychiatrie, Tofranil, le premier thymoleptique, représente une étape majeure dans le traitement des états dépressifs.

Résumé

Parmi 583 malades hospitalisés en clinique psychiatrique de l'hôpital général durant une période d'une année, 88 cas ont bénéficié d'une thérapie mixte Tofranil-ECT.

Avant que de rapporter les résultats obtenus, les observateurs ont tenu d'abord à préciser le terme vague et générique de dépression—ils distinguent, s'en tenant à la symptomatologie clinique classique, les dépressions endogènes primaires depuis Hippocrate dénommées "mélancoliques", des réactions dépressives secondaires à une ou plusieurs situations données et se greffant sur une personnalité antérieurement névrotique ou psychonévrotique.

Les résultats sont excellents dans la 1ère catégorie de dépressions—sur 21 mélancoliques, 80% de guérisons ont été obtenues de la période d'état de la maladie et dans 40% de ces cas, Tofranil seul fut administré. Les autres 40% reçurent de 6 à 8 ECT.

En ce qui concerne la 2e catégorie, Tofranil et psychothérapie furent associées, le médicament rendant la psychothérapie plus acceptée et plus efficace. Une disparition de l'état dépressif réactionnel fut constaté chez 24 patients sur 67 et 20 cas furent améliorés.

Presque toujours, nous avons noté des effets secondaires; les uns mineurs, tels que sudation, palpitations, sécheresse de la bouche, oligurie, éruptions fugaces, prurit, effets désagréables dus à l'effet atropinique du médicament, mais moindre si le patient en est averti et qui ne contrindique pas la poursuite du traitement.

D'autres complications, majeures celles-là, peuvent imposer un changement radical de la thérapeutique: ce sont la tentative de suicide rendue plus aigue par la levée de l'inhibition que semble provoquer le Tofranil, la crise de manie et la possibilité de crise épileptique. Nous avons observé de tels effets secondaires.

Il semble malgré ces effets secondaires rares d'ailleurs, que le premier thymoleptique qu'est le Tofranil soit d'un grand intérêt en clinique hospitalière, à la condition que le médicament soit employé à bon escient, car alors il peut parfois supprimer les ECT, presque toujours en diminuer le nombre mais une stricte observation s'impose au début de la cure aux fins de pallier aux conséquences des effets secondaires toujours possibles.

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Summary

Among 583 patients hospitalized in the psychiatric clinic of our General Hospital over a period of one year, 88 cases received Tofranil–EST mixed therapy.

Before reporting any results, the clinicians wanted to clarify the General term "Depression".

According to the usual symptomatology, they classify depressive reactions in two groups: the primary endogenous depression, named "mélancholia" since Hippocrates, and the depressive reaction resulting from one or many internal or external stresses, taking account of an already neurotic or psychoneurotic personality.

Results were excellent in the first category of depression: 80% of cure among 21 cases of melancholia—Tofranil alone was given in 40% of the cases—the other 40% received from 6 to 8 EST.

With respect to the second category Tofranil helped the efficiency and acceptance of psychotherapy. Withdrawal of the reactional depressive state was noted in 24 among 67 cases; in 20 other patients, there was marked improvement.

In almost every case, minor secondary effects were noted: perspiration, dryness of the mouth, oliguria, itching, disagreeable effects due to the atropinic effects of the drug; these effects are rather well tolerated if the patient is told about it and they do not interfere with continuing the treatment. On the other hand major complications might oblige to discontinue completely the treatment, namely the suicidal attempt more because of the disparition of inhibition which looks like an after-effect of Tofranil; other major complications are the maniac reaction and the epileptic fit.

Those major complications are rare, we can state that Tofranil is a precious thymoleptic of great interest in hospitalized cases.

With the necessary care it may often eliminate the EST or almost always reduce their number. We repeat that a very serious observation is necessary at the start of the cure to be prepared to deal with the consequences of the always possible secondary effects.

SOCIETE CANADIENNE D'ETUDES ET DE RECHERCHES PSYCHIATRIQUES

2156 ouest, rue Sherbrooke, Montréal

Conseil exécutif (1959). Dr V. Voyer, président; Dr F. Côté, vice-président; Dr J. B. Boulanger, secrétaire; Dr M. Berthiaume, trésorier; Dr H. Lehmann et Dr Y. Rouleau, conseillers.

Séances scientifiques (1959)

(27 janvier). Dr L. Poirier et Dr G. Gravel: "Etude de la réactivité chez le schizophrène"; Dr B. Rioux: "La toxicomanie à la ritaline existe-t-elle?"

(26 février). Dr J. B. Boulanger, Dr M. Braunstein, Dr F. Côté, Dr M. Ferron, Mme T. Gouin-Décarie, Dr V. A. Kral, Dr A. W. MacLeod, Dr W. C. M. Scott, Dr V. Voyer: Symposium sur "Grossesse et accouchement".(Réunion commune avec la Société Canadienne de Psychanalyse et la Montreal Medico-Chirurgical Society).

(23 septembre). Dr L. Houde: "Les réactions psychologiques de l'enfant malade"; Dr F. Côté et Dr J. Guillem: "Résultats de l'utilisation du 'Tofranil' en pratique psychiatrique"; Dr G. Paul-Hus: "Aspects particuliers de la schizophrénie chez les ruraux". (Congrès de l'Association des Médecins de langue française du Canada).

(15 décembre). Présentation du film "Les différents visages de la dépression", suivie d'un symposium sur la dépression: Dr H. Lehmann, "Aspects cliniques"; Dr J.-M. Bordeleau, "Aspects biologiques"; Dr Paul Lefebvre, "Aspects psychodynamiques"; Dr G.-H. Turcot, "Aspects psychothérapeutiques".

Editorial

THE BRITISH MENTAL HEALTH ACT, 1959

When The Mental Hospitals Act was enacted in Ontario in the year 1935 it was an advanced piece of legislation dealing with the care of mentally ill people. It was more progressive than any legislation existing at that time in Great Britain, the United States or elsewhere in Canada. The principles of the act were subsequently adopted in most of the other provinces of Canada. In the intervening years Canadians may have had some justification for believing that Great Britain was rather old fashioned about these subjects in their retention of terms which we had come to regard as obsolete.

The British Mental Health Act, 1959 should put an end to this complacency, if it did exist, and some of the features of the new act are so novel and progressive as to make their Canadian counterparts appear mid-Victorian.

Some of the contents of the new British act which are of great interest to Canadian psychiatrists are the subject of this article.

Section 4 contains the definition and classification of the people who come within the scope of the act and reads as follows:

> 4. (1) In this Act "mental disorder" means mental illness, arrested or incomplete development of mind, psychopathic disorder and any other disorder or disability of mind; and "mentally disordered" shall be construed accordingly.
>
> (2) In this Act "severe subnormality" means a state of arrested or incomplete development of mind which includes subnormality of intelligence and is of such a nature or degree that the patient is incapable of living an independent life or of guarding himself against serious exploitation, or will be so incapable when of an age to do so.
>
> (3) In this Act "subnormality" means a state of arrested or incomplete development of mind (not amounting to severe subnormality) which includes subnormality of intelligence and is of a nature or degree which requires or is susceptible to medical treatment or other special care or training of the patient.
>
> (4) In this Act "psychopathic disorder" means a persistent disorder or disability of mind (whether or not including subnormality of intelligence) which results in abnormally aggressive or seriously irresponsible conduct on the part of the patient, and requires or is susceptible to medical treatment.
>
> (5) Nothing in this section shall be construed as implying that a person may be dealt with under this Act as suffering from mental disorder, or from any form of mental disorder described in this section, by reason only of promiscuity or other immoral conduct.

It will be noted that a collective term "mental disorder" is introduced and is subdivided into four categories.

The first category "mental illness" is not defined in the act.

The second category "arrested or incomplete development of mind" is subdivided into "severe subnormality" and "subnormality". This would appear to encompass those people who are usually designated in Canadian statutes as mentally defective.

The third category, "psychopathic disorder" is not mentioned specifically in Canadian legislation. The term "mental illness" as it is defined in some of the Canadian statutes may be broad enough to include this condition but in the main it is not the practice in Canada to certify to mental hospital a person suffering from this condition.

The term "epileptic" is not used in the British act and no doubt it falls within category four "any other disorder or disability of mind."

Likewise there is no term in the act which specifically designates an alcohol or drug addict. Presumably an addict could not be committed under the British act unless his addiction had produced a condition of mental illness.

Having defined mental disorder, the act then goes on to state the conditions in which mentally disordered persons may compulsorily be admitted to hospitals. It is noteworthy that in this connection "hospital" does not mean only a mental hospital but also the hospitals which come under The National Health Service Act. In other words, hospital includes not only a state mental hospital but also the public general hospital.

The first type of compulsory admission is described in section 25. A patient may be admitted under this section provided he is suffering from mental disorder of a nature or degree which warrants the detention of the patient in a hospital under observation and ought to be so detained in the interests of his own health or safety or with a view to the protection of other persons.

The procedure requires an application and the written recommendations of two medical practitioners. A patient so admitted may be detained for a period not exceeding 28 days unless proceedings are taken for his further detention as provided in the act.

The second type of compulsory admission is described in section 26. This is a more permanent type of detention. It applies to a person of any age who is suffering from mental illness or severe subnormality or in the case of a patient under 21 who is suffering from psychopathic disorder or subnormality. The disorder must be of a nature or degree which warrants the detention of the patient in a hospital for medical treatment and such that it is necessary in the interests of the patient's health or safety or for the protection of other persons that the patient should be so detained.

A patient who is admitted under section 26 may be detained for one year with a provision for renewal.

A third type of admission is designated as an emergency and is described in section 29.

There must be an application and one medical recommendation. A patient may not be detained more than 72 hours unless proceedings are taken for his further detention.

There are proceedings known as guardianship which have no exact counterpart in Canadian legislation. This is dealt within sections 33 and 34. The procedure is an application supported by two medical recommendations which are like the recommendations for admission to hospital. The guardian has the same powers in relation to the patient as are held by a father in relation to a child of his under the age of 14. This does not interfere with the power of a court to appoint a trustee for the management of a patient's estate which is dealt with in part 8 of the act.

The act establishes what are known as Mental Health Review Tribunals. The power of a court to determine the legality of a patient's detention is preserved in the new act but in addition a patient has the right of appeal to a tribunal to determine the need for his detention.

Any formality in connection with the admission of a voluntary patient has been abolished. It is no longer necessary for a voluntary patient to sign a written application for admission.

Finally, attention is directed to an innovation which is probably without parallel in any of the English speaking countries.

Section 60 confers upon a court the power to make an order authorizing a convicted person to be sent to hospital or to be placed under guardianship as an alternative to fine or imprisonment. This applies where a person is convicted on indictment of any offence except murder, treason, piracy and certain types of arson. It also applies where a person is convicted in magistrates' court of an offence which is punishable on summary conviction with imprisonment.

Before making an order the court must be satisfied that the offender is suffering from mental illness, psychopathic disorder, subnormality or severe subnormality and the mental disorder is of a nature or degree which warrants detention in hospital or guardianship.

No fine or imprisonment is to be imposed in these cases.

The court will still have power to make a probation order with a condition requiring medical treatment where the mental disorder is of such a nature that the offender does not require to be detained in hospital.

Section 62 is of particular interest to psychiatrists. It provides that in these cases the court may accept a report in writing purporting to be signed by a medical practitioner. This dispenses with the need for a doctor to appear in court unless he is required to do so in a particular case.

There are two innovations in this act which would be regarded as drastic by Canadian standards.

The first of these two innovations is the one which authorizes the detention in hospital of a person suffering from a psychopathic disorder. A person of any age who is in this category may be committed to hospital for 28 days observation or committed to hospital by a court after conviction. A person who is under 21 in this category may be committed to hospital without the 28 day limitation on an application with two medical certificates. It is uncommon in Canada for persons in this category to be committed to mental hospitals. It is likely that the new British act will fix attention on this problem and it will be of interest to see what stand Canadian psychiatrists will take.

The second of these drastic innovations is the procedure whereby the court may sentence a person to mental hospital as an alternative to imprisonment or may order guardianship or may place him on probation with an order that he attend for treatment. Some exploration of this procedure has been initiated in Canada, particularly in the forensic clinic at the Toronto Psychiatric Hospital which is extensively used by the courts for this purpose. However, the Canadian Criminal Code does not contain any provision for psychiatric treatment as an alternative to imprisonment. The part of the Criminal Code which deals with the preventive detention of criminal sexual psychopaths and purports to provide for their treatment is not comparable inasmuch as the sentence is served at a penitentiary. The bold simplicity of the British enactment in itself would justify the remarks made at the beginning of this article. K.G.

PRELIMINARY PROGRAMME

CANADIAN PSYCHIATRIC ASSOCIATION ANNUAL GENERAL MEETING—BANFF 1960

16th, 17th, 18th JUNE

Thursday—16th June

9.00 a.m. - 5.00 p.m.—Board of Directors' meeting.
Noon on—Registration of members.

Friday—17th June

8.30 a.m. on—Registration of members.
9.00 a.m. - 12.00 noon—Scientific Session.
2.15 p.m. - 5.00 p.m.—Annual Business meeting (members only).

Saturday—18th June

9.00 a.m. - 1.00 p.m.—Scientific Session.
1.00 p.m. - 2.30 p.m.—Board of Directors' meeting.

ACCOMMODATION available at School of Fine Arts or through C.M.A. Housing Committee.

MAKE RESERVATIONS EARLY

ACCOMMODATION

CANADIAN PSYCHIATRIC ASSOCIATION MEETING

Banff, Alberta, June 16, 17, 18, 1960

Rooms are available at the Banff School of Fine Arts for members, from June 15th-18th.

40 twin bedrooms with bath—$7.50 per person per day.

11 twin bedrooms without bath—$6.50 per person per day.

Rates include meals.

Members not bringing wives should name another member as a co-registrant. Reservations made in order of receipt. Indicate day of arrival and departure and type of accommodation. Reservations for any nights earlier than above should be made through Canadian Medical Association Housing Committee.

Address inquiries to Dr. F. J. Edwards, Box 1000, Ponoka, Alberta.

Book Reviews

Motivation—A systematic reinterpretation. Dalbin Bindra, Ronald Press, New York, 1959–361 pp. Illus. $5.50.

The subtitle given this book suggests its approach. It is a comprehensive and detailed examination of the problems posed by "motivational phenomena". Although the experiments studied deal for the most part with behaviour at the infrahuman level, the approach to motivation is one that may be usefully applied to the study of human behaviour, as is aptly shown by the author in the last chapter.

Motivation is dealt with in relation to such activities as "eating, drinking, approaching, escaping, attacking, exploring, copulating, and material care of the young". Bindra does not believe that motivational phenomena are discrete psychological or physiological entities. Thus, to him, the concept of instinct, traits, needs and motives postulated by many psychological theorists, gives expression only to futile circular reasoning. He advocates careful definition of the class of an activity to be studied, without reference to cause or subjectively described state; study of the development of the particular activity in terms of constitution and experience; and study of the factors which call it forth.

Many will not agree that in order to eliminate or modify a response it is more important to know the factors which determine its occurrence than it is to know the circumstances under which it was first elicited. However, all who are interested in motivational phenomena will find this book well worth while.

M. A. HUGHES, Montreal

The Nature of Stress Disorder, Conference of the Society for Psychosomatic Research held at the Royal College of Physicians, May 1958. Hutchison Medical Publications Ltd., London, 1959, 298 pp. £ 1-5-0d

This book consists of fifteen papers which were read before the Society for Psychosomatic Research in May 1958, together with verbatim reports of the discussions which followed them. In addition there are sixteen plates to illustrate some of the findings in the various research projects and fairly complete bibliographies are provided for each of the topics under consideration.

This book is timely for one of the practical problems in medicine today is to discover more effective ways of treating psychosomatic disorders. In addition to establishing a correct diagnosis of the disease it is essential to clarify the social economic and cultural factors operating in the patients total life situation.

A stress disorder is defined as an illness which deepens at a time of crisis in the patient's life, and which clears up when the situation changes for the better, or the patient learns to adapt to it without undue tension. There can be no such thing as a sick person in isolation from his environment and it is generally accepted that behind every invalid there may be a sick family, a disorder in personal relationships or, in large cities, no relationship at all so that the patient suffers from marked social isolation. Genetic and constitutional factors are also considered in great detail as well as the later physical and mental experiences which influence the progress of psychosomatic disorders.

The papers fall into five groups. The first deals with clinical problems, namely Essential Hypertension by John Habling's, Pruritic Skin Conditions by

Brian Russell and Dyspepsia by Desmond O'Neil. These speakers emphasized the importance of the psychosomatic interview which unfolds the patient's personality within his life situation. The second group discusses problems of Experimental Stress in Flying and includes investigations into the responses of animals and man to stress. V. H. Tompkins, D. Russell Davies, R. A. Hind and W. J. Butterfield show how attack or flight appear to be the essential methods of coping with anxiety provoking situations. The third group of papers considers Stress and Occupation and here T. M. Martin, G. G. Dwyer and Nicholas Malleson present findings which indicate the value of an approach towards a more sociologically sophisticated analysis of epidemiological data which would facilitate the development of a preventative program in coping with stress disorders. The fourth group takes a new look at the person in his family setting with Harry Smith, J. Sandler and J. Anthony pointing out some evidence that the origins of stress disorders frequently appear in early childhood when enormous pressures are placed on the young. The final section points out some of the influences of genetic endowment with R. W. Parnell discussing somatometry, and C. Cartier the genetics of peptic ulcers and hypertension.

The general conclusion of the conference is presented by John Wisdon who makes an original and intensely stimulating contribution.

The book is a valuable contribution for psychiatrists, physiologists, psychologists and social workers as well as for every clinician interested in psychosomatic disorders and stress. V. A. Kral, Montreal

Sigmund Freud's Mission—An Analysis of His Personality and Influence. Erich Fromm, World Perspectives, Harper, New York, 1959. 120 pp. Price $3.00.

This is a more modest little book than its resounding title and subtitle suggests. Dr. Fromm's thesis is this:

"Psychoanalysis, as Freud liked to emphasize himself, was his creation. Its great achievement as well as its defects show the imprint of the founder's personality. No doubt, then, the origin of psychoanalysis is to be found in Freud's personality."

This is a typical and rather unkind Freudian counterploy to Freud. But one wonders whether this is a proper way to examine scientific ideas. The relationship between Freud's personality and his ideas, however, interesting, is largely a red herring. The question is, what were those ideas, what were their qualities and how useful have they been? This question Dr. Fromm does not attempt to answer and his inability to do so probably arises from his failure to see that Freud's personality and the influence of the ideas which he expressed so vividly are perhaps much less closely related than he supposes. Part of the trouble is that 120 pages is not nearly enough for a subject of this sort. It would not really suffice for an analysis of his personality alone and it certainly cannot do justice to the influence of his ideas. One does not know whether to congratulate Dr. Fromm on his audacity in trying to compress so much into so little, or to castigate him for the inevitable distortion that has occurred.

Fromm's method consists of liberal quotations largely from Ernest Jones, supplemented by his own commentary. At times this commentary becomes a

little tiresome and obtuse. For instance he writes, "It is also part of the same pattern of being afraid of cutting one's roots that Freud lived in the same apartment in the Berggasse from the time early in his marriage to the day of his forced emigration from Austria".

This, Fromm opines, is corroborative evidence for his dependence upon his mother. But can one possibly say this without knowing something of the frequency with which established physicians moved their lodgings in Vienna in the early twentieth century? Vienna of the 1900's was not New York of the 1950's and physicians were not as footloose as they are now. My guess is that Freud behaved as many other physicians behaved in Vienna at that time. Certainly from accounts of medicine in England at the turn of the century many physicians kept their home and consulting room for the whole of their lives, and there is no reason at all to suppose this indicated a particular dependence upon their mothers.

The strange cocaine episode is passed over with this fleeting reference, "And if you are forward you shall see who is the stronger, a gentle little girl who doesn't eat enough or a big wild man who has cocaine in his body." One would never gather from this that Freud earnestly persuaded his bride-to-be to take cocaine and he felt that it was a universal tonic, or that he bitterly regretted that he had not recognized its potential as a local anaesthetic. This is an extremely illuminating episode in Freud's life and it is a curious omission because it throws much light on his character.

Almost as curious is Fromm's response to a remark which he quotes Ferenczi as making to Jones, "That the ideal plan would be for a number of men who had been thoroughly analysed by Freud personally to be stationed in different cities or countries. There seemed to be no prospect of this, however, so I (Jones) proposed that in the meantime we should form a sort of Old Guard around Freud. It would give him the assurance that only a stable body of firm friends could, it would be a comfort in the event of further dissensions."

Now, while this is interesting, Jones here raises the whole question of who shall analyse the psychoanalysts. Any careful reader of Jones' eulogistic book cannot fail to be struck by the extraordinary sketchy analysis of the Old Guard and of Freud himself. Freud is said to have carried out an autoanalysis with the help of the curious Fliess. Ferenczi had an analysis largely by correspondence though with a ten days horseback episode. Abraham somehow never seems to have been analysed though he intended to be. Jung, who suggested the whole notion, soon became in his own words, "anathema to the psychoanalyst." Jones had "some months" intensive analysis. The actual time seems to have been six weeks to two months in 1914 from Ferenczi but Ferenczi had not had his "hippic" analysis then. It is all very puzzling.

Fromm is not always wholly fair but generally his criticism is well made and should be read by those interested in psychiatry and psychoanalysis. But it is a pity that he has not written a richer and deeper work than this, for surely psychoanalysts with their extraordinary preoccupation with Freud's words, views and deeds, need to be reminded of Whitehead's observation: "A movement that fails to forget its founder is lost." With its constant harking back to what should be old, forgotten, far off things, psychoanalysis demonstrates all too vividly that its inventive and creative phase ended at the beginning of this century.

H. Osmond, Weyburn

OBSERVATIONS ON ILLEGITIMACY

SOLOMON HIRSCH, M.D.[1]

The writer was struck while working in a pre-natal clinic[2], with certain similarities in the personalities of the illegitimately pregnant women, particularly in the way the women described and tried to explain their behaviour. There is a considerable amount of literature (1-5) on this subject, both by psychiatrists and social workers and some discussion of differences in the course of the pregnancies of illegitimately pregnant and married women.

It was felt that another survey would be worth while for the following reasons:

(1) In the literature, (1-4) it is commonly assumed that a basic factor in motivation is an unconscious desire for pregnancy, or that illegitimate motherhood represents the solution, or attempts at solution, of unconscious conflicts. It was felt that it might be of interest to check this hypothesis.

(2) More data are required on the comparison of married and illegitimate pregnancies, to establish whether or not differences in the course of pregnancy and in labour exist.

(3) Cultural factors are important in determining the attitude of the illegitimately pregnant woman and of society and therefore, a study in a different area might be revealing.

Method

It was decided to interview consecutive illegitimately pregnant women who were admitted to the clinic. Ninety-six women were interviewed one or more times. The interviews were centered around their motivation for having sexual relations, the neglect of contraception, their symptoms, particularly nausea and vomiting, their life history and their desire for therapy. An attempt was made to discover the drives responsible for their behaviour and to investigate the psychological effects of illegitimacy upon symptomatology and complications of pregnancy. The women's charts were studied after delivery to ascertain the number and kind of complications and to obtain data on their behaviour during their stay in hospital.

Material

The age range of the women was 14 to 38 years with a mean age of 21.3 years. Twenty-four of the women were 18 years or under. Almost no data could be obtained from six women because of very low intelligence or refusal to co-operate. Intelligence testing by the Weschler Bellevue test was done on fourteen women, part of a group who wanted their babies adopted. Of this group four were above everage, three average, four borderline and three defective. A rough estimate of the intelligence of the remainder based on their school results and their verbalizations are as follows: average or above 27, dull normal 23, borderline 23, defective 9.

Motivational Responses

Almost all of the women showed some surprise at the question, "How did it happen?" The women were almost completely unaware of themselves psychologically. It had not occurred to them that they were in any way responsible for their own behaviour. Some protested that they were not unique in

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[2]Dalhousie Public Health Clinic, Halifax, Nova Scotia.

having had a baby before marriage, with statements like these: "You can't blame either of us, I'm not the first and I won't be the last." Some women vaguely blamed fate. For example, one said "all of a sudden it happened." Many of the women rationalized their behaviour giving excuses for having intercourse like the following: "I was tired of being a virgin," "I just did it to be mischievous," "I heard you had to try it out."

Forty-one of the women stated that they had had sexual relations because the man had desired or demanded it. Eleven of these women stated that they were in love with the man and would do anything for him. Most of the others of this group specifically mentioned that they wanted to please the man so that he would not reject them. This group of women made statements like this: "He might like me more if I did," or "I wanted to become more popular." The women who were "in love" stressed their devotion. For example, "I love him, I wanted to make him happy," "I pitied him when he got excited." Many of the women "in love" felt that it was permissible to have sexual relations if one loved the man.

This group was considered to be unusually dependent with a strong need for a dependent relationship with a male whose wishes had to be carried out at any cost. These women, contrary to what has been described in the literature, (4) had a strong interest in the man and were badly disillusioned when the man left them following his learning of the pregnancy.

Sixteen women simply stated that marriage had been planned and it was impossible to get further insight into their motivation. These women seemed to feel that if marriage were planned, there was no question of not having intercourse.

Of the women who had been planning to be married, ten stated that they themselves had refused marriage after becoming pregnant. Several reasons were given for this latter behaviour of which the following are examples: "I'd never marry if I were forced to," "I now have another man. I don't have relations with him, he has too much respect for a girl."

The explanation of the behaviour of these ten women is not altogether clear. In some cases it seemed that the pregnancy made the women feel very guilty and contaminated, and caused such hostility to the father of the baby that marriage to him was impossible. In other cases, the threat of motherhood and of being an adult woman seemed to cause such terror, that the baby was placed for adoption and the relationship stopped.

Sixteen of the women were obviously promiscuous. The reasons for their promiscuity were often obscure. A few of these were psychopathic in all spheres and other appeared able to relate to men on a sexual basis only and had intercourse with any man who took them out.

Six women stated that they wanted to get pregnant. One was a schizophrenic girl who stated that she wanted a baby but she did not want to leave her mother and did not want to be married. Two others said that they were sure they would get married if they became pregnant. One said flippantly, "I've always wanted a baby" but would not elaborate further. Another said "I love him. Now I can have his baby anyway."

Only five women implicated their own sexual desire as important in leading to sexual relations. Twenty women enjoyed relations and had frequent orgasms, thirty-three enjoyed relations but only rarely had orgasms, and thirty-

seven were completely frigid, many stating that intercourse was painful or repulsive and that they hated it.

Seven women expressed overt hostility to their parents and it was obvious that this was a strong motivating force in their behaviour. Less overt hostility to the parents was a very common finding.

In a few women, curiosity or the need to test their ability to be mature women was important. (One, for example, told how after a childhood accident with injury to her external genitals, she considered she would never have children and had a strong desire to prove to herself that she could.)

It was difficult to get a satisfactory understanding of what was the main motivating force in the behaviour of the remaining women. It was the writer's impression that for the most part these women fitted into the group first described but they were so vague and unaware of their feelings that this could not be ascertained for certain.

The family backgrounds demonstrated, in general, marked rigidity in parental attitudes about sex. Almost all the women stated either that they had been taught nothing about sex or that sex had been stressed as something dangerous and wicked. They had been warned about men as follows: "You know what men are like, they are only after one thing, so be careful." Such teaching appeared to convince the women that by consenting to intercourse, they could satisfy a man's greatest desire and thus get affection from him.

It was considered that data about birth control would be important in revealing how the women dealt with their strong conscious wishes not to become pregnant. Again, their handling of this situation was illustrative of their extreme dependence on the man; all but twelve of the women assumed no responsibility whatever for preventive conception, yet blindly denied this eventuality to themselves. In fact, they denied responsibility for the occurrence of intercourse. If intercourse happened to them, as passive participants, it was acceptable; however, discussing or using contraception implied to them an active willingness for intercourse which was unacceptable because of the guilt aroused. Of course, cultural factors played some role in this. It is almost unknown for a single woman in Nova Scotia to ask her doctor for birth control measures. To several Catholic women, birth control seemed a greater sin than pre-marital sexual relations.

Course in Pregnancy and Parturition

It has been mentioned by some writers that nausea and vomiting is rare in the pregnancies of unmarried women (5). In this series only thirteen women had no gastro-intestinal complaints whatever. Fifty-five women had nausea with or without vomiting. This varied in severity from mild nausea for a day or two to persistent nausea and vomiting for months. No case was severe enough to require hospitalization. The above figures are approximately what one would expect in a group of married women. There were no consistent psychological differences between the women who had nausea and vomiting and those who did not. Rejection of the baby or the pregnancy did not appear to be a significant factor in producing nausea and vomiting.

Few of the women had any desire for therapy. The few who did want help, had situational difficulties or chronic anxiety. None of the women felt that the fact of their pregnancy indicated a personality abnormality requiring therapy.

The case records of seventy-six of the women randomly selected were examined after delivery. There were thirty-nine female babies and thirty-seven

male babies. The weights were in the usual range. It was the obstetrician's impression that there was no significant differences in labour but that the unmarried women seemed to expect less attention and complained less. There was no significant difference in sedation required.

Seven of the group were delivered by Caesarian Section – an unusually high number but hardly statistically significant. All the Caesarian Sections were done because of pelvic abnormalities. Two of the women had mild toxemia of pregnancy. There did not appear to be any significant difference in the condition of the babies on discharge from those of the babies of married women. (Discharge from hospital usually occurred in from seven to fourteen days.)

Many different cultural groups are represented in this area and even within similar groups there were various ideas of what was right or wrong. Some of the women acted as if the doctor were somewhat naive in asking any kind of question about the subject. They felt that if a man and woman were dating regularly, they would, of course, be having sexual relations. One woman stated that a man certainly would not marry a woman who would not give in to his sexual demands. However, these ideas were the exception. It was the writer's impression that illegitimacy was more or less accepted by the coloured women and their families but strongly rejected by other groups. In many cases the girl was no longer accepted into the home.

Discussion

In this type of survey one has to keep in mind exactly what group of women one is studying. Is one studying the small percentage of women who have intercourse who happen accidentally to get pregnant? Is one studying women who are unable to arrange for an abortion? Other pertinent questions of this kind could be asked. The present study concerns itself with women of a socio-economic group who cannot afford private care, who have, as a group, lower than average intelligence, who have had intercourse without the successful use of birth control methods, who conceived and who are unable or unwilling to arrange for an illegal abortion.

The acquisition of data in one or several interviews, may be open to argument, some feeling that this would be inadequate to draw conclusions about motivation for behaviour. Although there is some validity in this, often sufficient information can be gathered to question previous explanations and suggest a new possibility.

In the past, writers have stressed that since a woman behaved in such a way as to become pregnant, she must have unconsciously desired the baby, or that the pregnancy itself resolved some conflict. This type of hypothesis, very often used to explain behaviour in any area, must not be accepted blindly but investigated fully.

The concept that the ego is at fault due to deficiencies in some areas, might better explain the facts. This has some relevance to both prevention and therapy. The writer concludes that the commonest basic explanation for the pregnancy in this study is the extreme dependency of the women and a deficient ego, leading to poorly integrated behaviour.

The data concerning the nausea and vomiting are interesting and certainly suggest that strong conscious rejection of the pregnancy has little to do with its etiology. The writer has no explanation as to why the results of other investigators are so different in this respect.

Summary

Many different personality types were represented in this study as has been described by various observers.

The major factor motivating the sexual behaviour of these women was the overwhelming importance to them of maintaining the dependent relationship upon a male with a total and blind acquiescence to his wishes. Of lesser importance were acting out against parents, a strong sexual drive, the need to prove oneself a woman and a desire, conscious or unconscious, to have a baby. Much guilt was aroused by the use of or insistence on birth control measures; these implied responsibility for sexual activity, the use of such measures was precluded. Contrary to other reports, nausea, vomiting and obstetrical complications occurred with the same frequency as in married women. The course of the pregnancy did not appear to be affected in any way.

It was concluded that a weak ego structure was more basic to their behaviour than the unconscious drive to have a baby, or the acting out of unconscious fantasies which often have been assumed in the previous literature. The results suggest that the mild nausea and vomiting of pregnancy is of physiological rather than psychological origin, and that the course of pregnancy is not as readily affected by unhealthy motivation for having the baby as has often been assumed.

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Résumé

Cette étude présente plusieurs types différents de personnalité tel que noté par plusieurs observateurs.

La principale motivation du comportement sexuel de ces femmes était l'extrême importance pour elle de maintenir une relation de dépendance avec un homme et de soumission aveugle à ses désirs. On pourrait aussi désigner d'autres facteurs de moindre importance, comme l'externalisation d'un sentiment agressif vis-à-vis les parents, une forte impulsion sexuelle, le désir de prouver sa féminité et le besoin conscient ou non d'avoir un enfant. L'utilisation ou même la discussion de mesures anti-conceptionnelles réveillait beaucoup de culpabilité; ces dernières impliquaient une certaine responsabilité pour l'activité sexuelle et, comme telles, étaient rejetées. Contrairement à d'autres études, on a noté que les nausées, les vomissements et les complications obstétricales se sont répétés avec la même fréquence que chez les femmes mariées. L'évolution de la grossesse n'a pas semblé être modifiée de quelque façon que ce soit.

En conclusion, un ego faiblement structuré semble plus responsable de leur comportement que le désir inconscient de l'enfant ou l'externalisation de fantaisies inconscientes comme l'avaient décrit les études antérieures. Les résultats suggèrent que les nausées et les vomissements de la grossesse sont plutôt physiologiques et que l'évolution de la grossesse n'est pas aussi affectée qu'on l'avait cru par des motivations malsaines.

PERSONALITY IN RELATION TO CHOLESTEROL METABOLISM*

R. Bruce Sloane, M.D., Alexandre Habib, M.D., Mark Eveson, M.A.

The aetiology of coronary artery disease, a major health problem, and especially the role of cholesterol metabolism and atherosclerosis, has been widely studied. Correlations have been made between plasma lipid levels and diet (i), age, sex (ii), body-weight and build (iii). Physical activity (iv), heredity (v), occupation, stress (vi), and personality (vii) have all been variously indicted. Nevertheless, the principal challenge of the early detection and therapy of coronary heart disease in apparently healthy individuals still remains unsolved. Both results and methodology of such research remain controversial. Personality investigations, in particular, have been hampered by the study of end rather than beginning processes of disease.

The present investigation was designed to study more closely the personality traits related to cholesterol metabolism. Thus the criterion of selection was a physical one, namely high or low serum cholesterol following eight days of fat free diet. The associated findings then become dependent variables, although the relationship is not necessarily one of cause and effect. Moreover, no necessary correlation can be assumed between coronary artery disease and cholesterol metabolism. In addition, it remains to be proven that the personality patterns differentiating the two groups of subjects also distinguish patients suffering from coronary artery disease from normals. (Fig. 1.)

The subjects were selected from 178 young volunteer, predominantly medical students who had taken part in diet studies at Queen's. Those who were separated more than one standard deviation from the mean in terms of fasting cholesterol level were chosen. There were 13 (all male) with a low cholesterol level and 13 (11 males, 2 females) with a high cholesterol level (— 107 and + 165.5 mg. %). There was no significant difference in age or intelligence. Each member of the group was interviewed and somatotyped and a complete history taken (Fig. 7.) The majority of each group were also seen in weekly group discussions. Each subject was asked to complete his self and ideal self concept in terms of an adjective rating scale covering 18 dimensions of personality (45). In addition, the Cattell 16 PF Personality Test and the Guilford Inventory of Factors STDCR and 64 items from the Cattell Objective Analytic Battery were administered. These latter results are not yet available for reporting.

The low cholesterol group showed a considerable degree of mutual interaction, sociability and friendliness, without overt anxiety or controversy. Their self and ideal self concepts reflected this general impression. They desired to be less anxious but showed little discrepancy between their self and ideal self (Figs. 2 and 3.) The sociogram confirmed the mutual interaction. All had brothers and sisters and they also showed a higher incidence of both neurotic traits and major operations. In contrast, the high cholesterol group was extroverted, critical of authority and verbally aggressive (Fig. 4.) There was competition for leadership which was also manifest in the sociogram (Fig. 5.) Their self

*Abstract of paper presented at the Canadian Psychiatric Association Meeting on June 6th, 1959, in Ottawa.

ratings revealed consistently greater hostility than the low group but they wished to be less hostile, very much less anxious and more sociable. Nearly half had been only children and there was a significantly greater amount of coronary heart disease in their families. They showed a preponderance of mesomorphy (muscularity) (Fig. 6.)

Thus, it seemed that the latter group met their needs mainly by aggressive competition, but felt guilty and anxious about this, fearing that such traits alienated them from their fellows. The former group, on the other hand, had fewer overt conflicts, were better satisfied with themselves, and perhaps more ready to accept dependency.

The translation of behavioural and psychological indices into somatic is complex. There are certainly cardiodynamic accompaniments to emotion mediated by the catecholamines which if constantly invoked in the presence of other predisposing factors might provide the substrate of coronary disease. Beyond this it is difficult to speculate (Fig. 8.)

These preliminary findings would, however, suggest that an intrinsic defect of lipid metabolism is linked to certain personality traits which may secondarily lead to unsatisfactory life situations. Whether the conflicts engendered by these in turn result in compensatory dietetic habits seems problematical and of lesser importance. Thus, diet might assume less significance in the epidemiology of this disease.

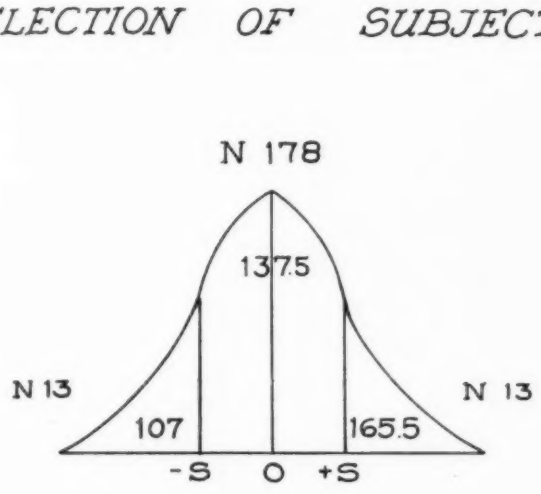


Fig. 1

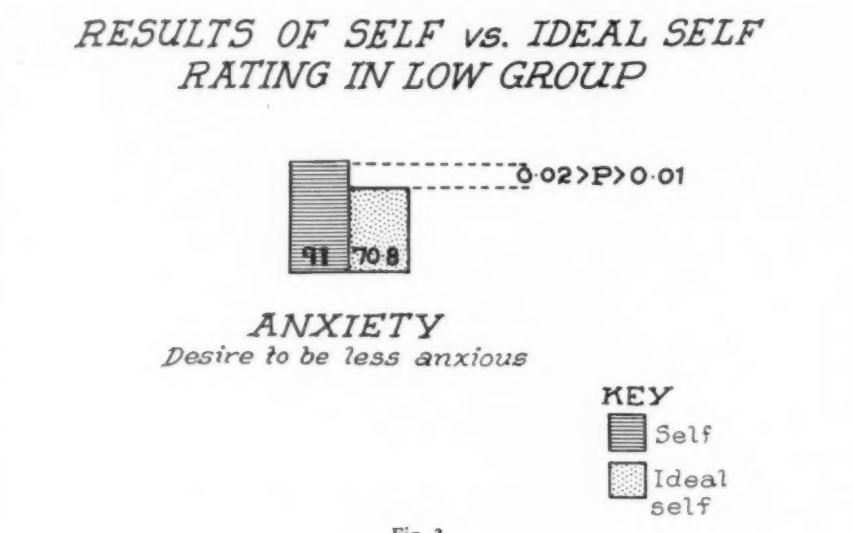

RESULTS OF SELF vs. IDEAL SELF RATING IN LOW GROUP
0·02>P>0·01
91
70·8
ANXIETY
Desire to be less anxious
KEY
Self
Ideal self

Fig. 2

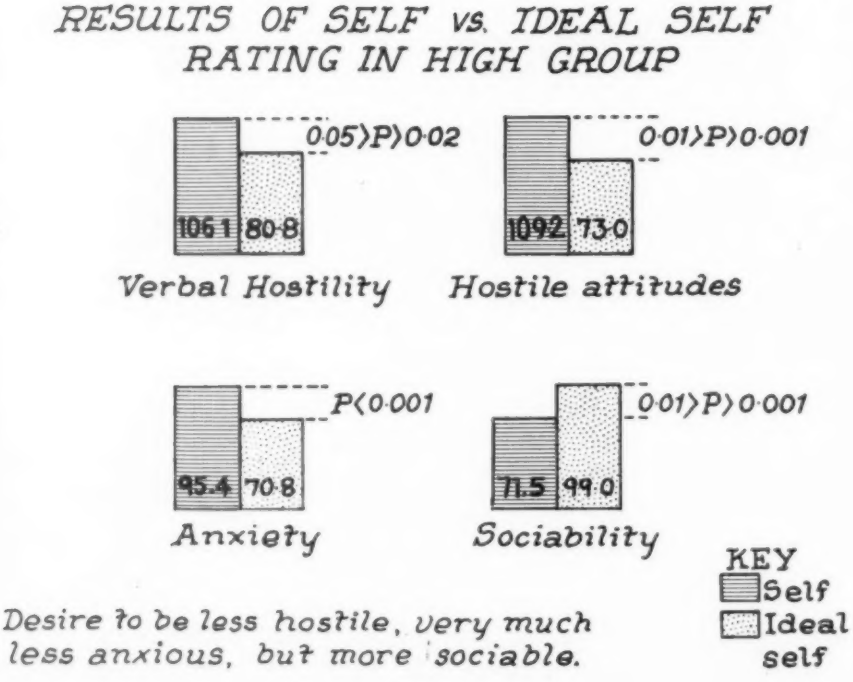

RESULTS OF SELF vs. IDEAL SELF RATING IN HIGH GROUP
0·05>P>0·02
106·1
80·8
Verbal Hostility
0·01>P>0·001
109·2
73·0
Hostile attitudes
P<0·001
95·4
70·8
Anxiety
0·01>P>0·001
71·5
99·0
Sociability
KEY
Self
Ideal self
Desire to be less hostile, very much less anxious, but more sociable.

Fig. 3

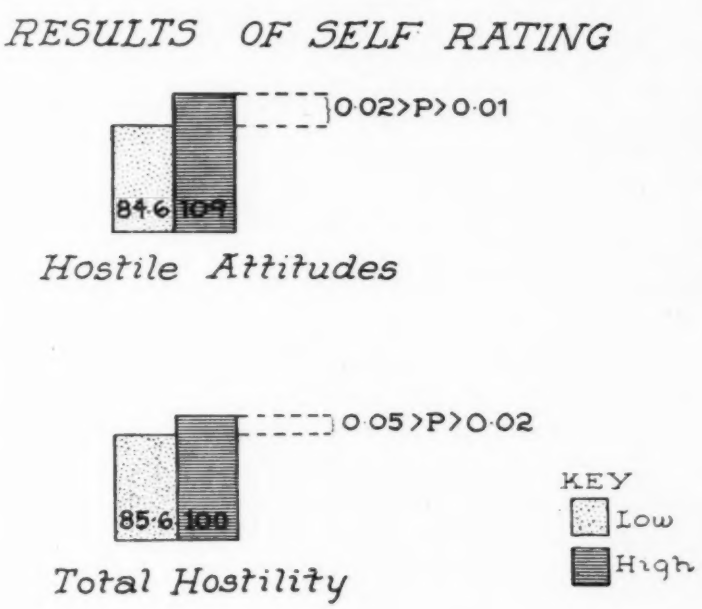

RESULTS OF SELF RATING
0·02>P>0·01
84·6
109
Hostile Attitudes
0·05>P>0·02
85·6
100
Total Hostility
KEY
Low
High

Fig. 4

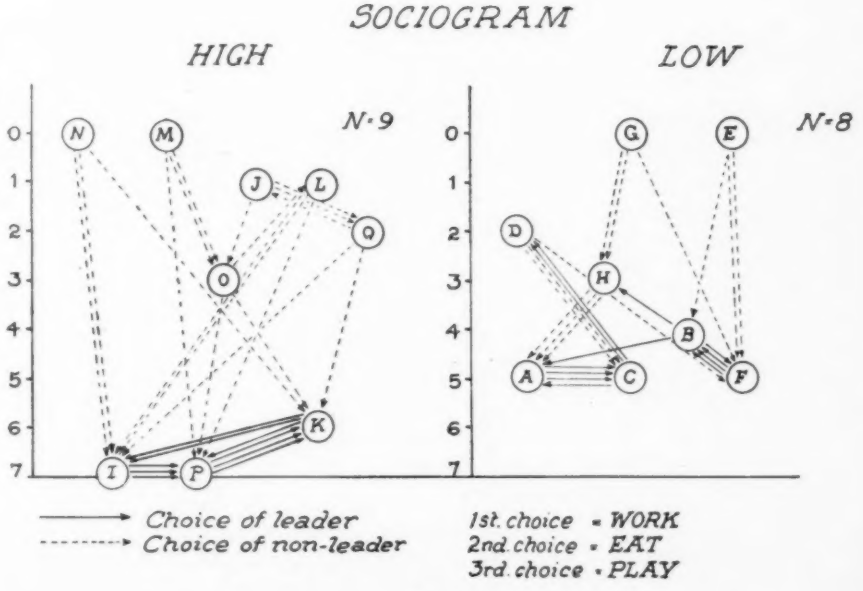
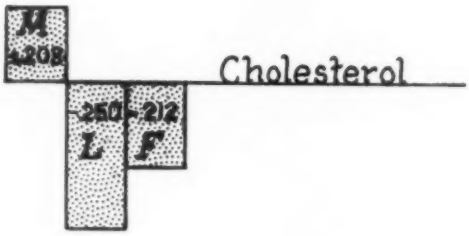

SOCIOGRAM
HIGH
LOW
N·9
N·8
0
1
2
3
4
5
6
7
N
M
J
L
Q
O
K
I
P
G
E
D
H
B
A
C
F
Choice of leader
Choice of non-leader
1st. choice = WORK
2nd. choice = EAT
3rd. choice = PLAY

Fig. 5

RESULTS OF SOMATYPING



Correlation of
Muscularity M (Mesomorphy)
Linearity L (Ectomorphy)
Fatness F (Endomorphy)
with Blood Cholesterol

Fig. 6

Results of Medical and Psychiatric History

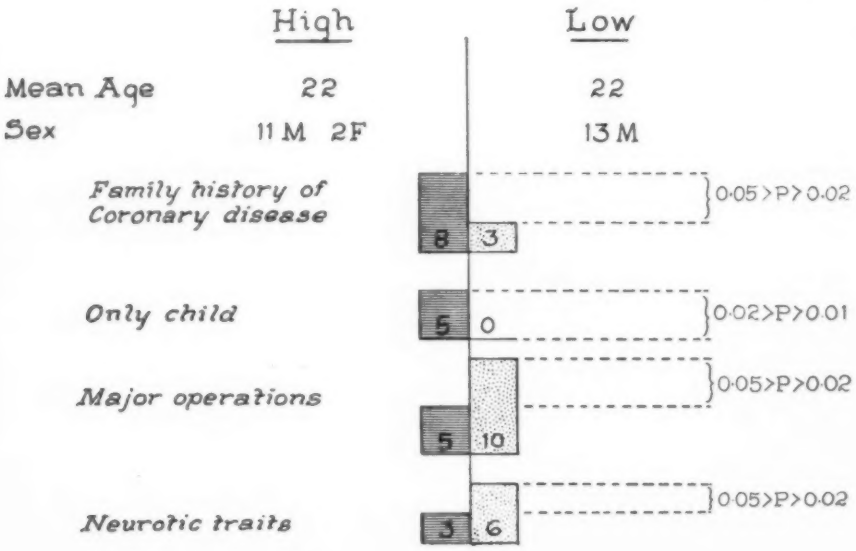


Fig. 7

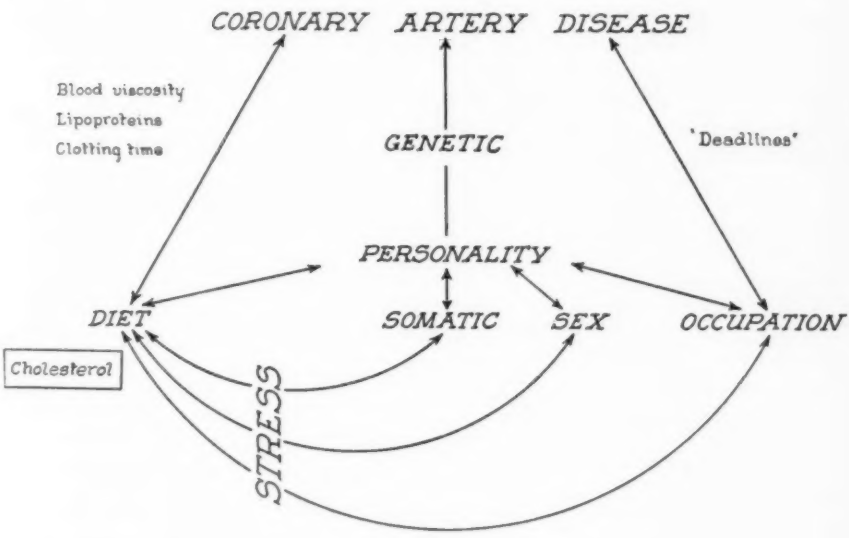


Fig. 8

Résumé

Ce travail est une étude approfondie sur l'étiologie de la maladie coronarienne, un problème de santé important, et spécialement sur le rôle du métabolisme du cholestérol et de l'athérosclérose. Elle établit des corrélations entre les niveaux des lipides plasmatiques et la diète (I), l'âge, le sexe (II), le poids et la constitution (III). L'activité physique (IV), l'hérédité (V), le genre d'occupation, la tension (VI) et la personnalité sont inculpés à des degrés divers. Néanmoins, il reste encore à trouver le moyen de détecter dès le début la maladie coronaire chez les individus apparemment en santé. Les résultats et la méthodologie de telles recherches demeurent des sujets de controverse. Les investigations sur la personnalité, en particulier, ont été moins fructueuses parce que portant sur la période terminale de la maladie plutôt que sur le processus du début. La présente étude avait pour but d'examiner de plus près les traits de la personalité en rapport avec le métabolisme du cholestérol. Aussi le critère de base est un critère physique, à savoir un taux de cholestérol sérique bas ou élevé après huit jours de diète sans gras.

Les données obtenues deviennent alors des variables valables, bien qu'il n'y ait pas nécessairement une relation de cause à effet. Bien plus, on ne peut établir nécessairement des corrélation entre la maladie de l'artère coronaire et le métabolisme du cholestérol. Il reste à prouver que les profils de personnalité, permettant de différencier deux groupes de patients, soient en mesure de distinguer aussi les patients souffrant de la maladie coronaire de ceux qui n'en souffrent pas.

On a choisi les sujets parmi 178 jeunes volontaires, provenant surtout d'un groupe étudiants en médecine qui avaient participé à des études sur les diètes à l'université Queen. Ceux qui présentaient un taux de cholestérol qui s'éloignait de plus d'une "déviation standard" de la moyenne furent choisis; c'est-à-dire 13 sujets (tous des hommes) qui présentaient un bas niveau de cholestérol et 13 autres (11 hommes et 2 femmes) avec un niveau élevé (-107 et 165.5 mg.%).

Les sujets n'offraient pas de différence importante d'âge ou d'intelligence. On fit un examen poussé de chaque membre du groupe, on établit son type somatique et on obtint une histoire de cas détaillée. La plupart des membres de chaque groupe furent suivis de semaine en semaine et leur cas discuté en groupe. Chaque sujet eut aussi à définir le concept qu'il se faisait de lui-même et de son "moi idéal" utilisant une échelle comprenant 18 traits de personnalité. De plus on appliqua le test de la Personnalité de Cattell 16 PF et l'inventaire des facteurs STDCR de Guilford ainsi que 64 item de la batterie Cattell de tests objectifs et analytiques. Les résultats de ces derniers examens ne sont pas encore disponibles. Le groupe à basse teneur de cholesterol montra un degré considérable d'échanges entre eux, de sociabilité et de camaraderie sans anxiété ouverte ni tendance à la controverse. Leurs concepts de leur "moi" et de leur "moi idéal" reflétaient cette impression générale. Il désiraient être moins anxieux mais montraient peu de différence entre leur "moi" et leur "moi idéal". Le sociogramme confirma cette tendance aux échanges entre eux. Tous avaient des frères et des soeurs qui montraient aussi une incidence plus élevée de traits névrotiques et d'interventions chirurgicales majeures. Par contre, le groupe à cholestérol élevé était extroverti, critique de l'autorité et agressif dans son langage. Il existait dans ce groupe de la compétition pour la position de chef, manifeste aussi dans le sociogramme. L'appréciation qu'ils ont fait de leur personnalité reconnait de façon constante de l'hostilité plus grande que pour le groupe à basse teneur, mais un désir de voir diminuer cette hostilité, d'être moins anxieux et plus sociables. Près de la moitié étaient des enfants uniques et portaient dans leur ascendance un plus grand nombre de cas de thromboses coronaires. Ils montraient également une plus forte tendance à la constitution mésomorphique (développement musculaire).

Ainsi, il semble que les membres de ce dernier groupe satisfont leurs besoins principalement par une compétition agressive, mais ils en ressentent de la culpabilité et de l'anxiété craignant que ces traits ne retournent leurs semblabes contre eux. Les membres du premier groupe, par ailleurs, présentent un moins grand nombre de conflits conscients, sont plus satisfaits d'eux-mêmes et plus prêts à accepter un état de dépendance.

Etablir une correspondance entre les indices psychologiques et de comportement et les caractéristiques somatiques est une tâche complexe. Il y a certainement des manifestations cardio-dynamiques secondaires aux émotions, elles-mêmes en rapport avec le métabolisme des catécholamines. Lorsque ces manifestations surviennent d'une façon continue en présence d'autres facteurs prédisposants, il est possible qu'elle fournissent le substrat à une maladie coronarienne. Il est difficile d'aller plus loin dans nos spéculations.

Ces résultats préliminaires, cependant, semblent indiquer qu'une anomalie du métabolisme des lipides est reliée à certains traits de personnalité qui se traduisent secondairement par des situations de vie insatisfaisantes. Il est plus difficile et de moindre importance d'établir si les conflits engendrés produisent à leur tour des habitudes diététiques compensatoires. Aussi la diète paraît comporter moins d'importance dans l'épidémiologie de cette maladie.

EMOTIONAL FACTORS IN CORONARY OCCLUSION*

BARNEY M. DLIN, M.D.

Al, a 33-year old negro private detective was admitted to hospital with an acute anterior myocardial infarction. One week after admission he was visited by a psychiatrist who was introduced as part of the therapeutic team to help with any emotional factors which may have contributed to the attack. The patient seemed anxious to confide in the examiner.

He was born in the Southern States, the first of six siblings, and moved to the north at the age of two. His father, 58, an ordained minister, was described as a strict, religious, moral person, whose word was law. "I'd rather take a beating from him than his talking, he makes you scared and ashamed". Mother, aged 49, self-sacrificing and superstitious, was very close to the patient. She unconsciously filled the patient with many fears, for example by saying "don't ever turn your back in your sleep", warning him that he may be killed. She would often go along with him when he made an arrest. The mother referred to the patient as "Brother". His five younger siblings have for years depended on him for financial aid.

Education and refinement were stressed. The patient was graduated from high school at the age of 18. He was considered an excellent student, popular with others and very active in student activities. Following school he held various jobs where he won quick promotions through his popularity and conscientiousness. Although he is the only negro in the detective agency, he is second in charge.

He seemed reticent to talk about his love life. Sex began at the age of 20, he was married at 29, and was divorced after six months, rationalizing this on the basis of interference by the in-laws. Since leaving his wife, Al has been running from one girl to another. "All I am interested in is satisfying myself". He denied any signs of impotency; however, his most recent girl noted that the patient's potency was markedly decreased two months before Christmas and had continued to diminish up to the time of his attack. This was a frequent source of argument between them. Prior to his attack, he no longer wanted sex, but seemed more anxious just to sleep and be cuddled by his mate. Most of the women he sought out were older. He rationalized this by saying that they were more appreciative, less troublesome and "something that you can hold on to".

Although there were no overt signs of neurosis during childhood, one was impressed by the amount of unconscious hostility felt towards his father, and by his intense oral relationship to his mother. He defended against his feminine identification by using his position in the law to attack men. He repressed most of his hostility. His boss stated that Al was the most even-tempered man he knew. However, his girl friend stated that he would become livid with anger and beat her up on many occasions.

He was unusually compulsive and perfectionistic in his work.

A few months prior to illness he would wake up from a sound sleep suffering from an anxiety attack. He would smoke a few cigarettes, drink some milk and force himself back to sleep. He became afraid to sleep alone. His girl friend would come to his apartment at different times of the night, just so that he could lie down and sleep for a few hours. He often cried in his sleep.

The patient was compensating adequately, without symptoms, until a few months before Christmas, when a series of events took place, all of which seemed

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significant in leading up to his heart attack. a) His girl friend noticed the beginning signs of diminishing sexual potency. b) The family and friends noticed slight changes in his personality. He became more irritable and short-tempered. "I felt it all inside, all nervous and shaky. I would rush to get my work done. I had no patience". c) He would wake up in the middle of the night in panic, but calm down in the presence of women. He had been an excellent sleeper previous to this. d) He perspired profusely for no conscious reason. e) He became very upset when his father was admitted to hospital at Christmas time. He feared that he might have to "support father for the rest of my life, while everyone else sponged off me". The wish and fear that father might die was depressed. f) In January he was left in charge of the detective agency. He was conscientious and perfectionistic, but was constantly fighting to control his temper and please the boss. g) His appetite changed. He began to eat and drink voraciously. h) He was frustrated by not being able to collect some of his old debts. He wanted the money to give to his mother. i) In January he gave his mother the key to his apartment, stating that "it just dawned on me that mother didn't have a key". Added to the above strains, the patient was travelling from place to place while on the job, and was running from one girl to another. However, he denied any concern about his women or his job. On the morning of his heart attack his mother called to warn him of a premonition. She felt that "something was going to happen, something unusual. Don't turn your back in your sleep". The patient told his mother not to worry, however, he could not completely cast aside the feeling that his mother's premonitions were usually followed by something bad happening. The morning of his attack was very quiet. He didn't feel like going anywhere. He cancelled a date with a girl friend and went to a friend's place to watch TV and play with the children. That evening he went to a girl friend's place, chatted with her for an hour and then kissed her goodnight. Ordinarily he would have slept with her, however, this night he did not. He returned to his apartment and retired about 11 P.M. He felt a little depressed. At 5 A.M. he awoke nauseated and vomiting, and soon after was admitted to the hospital with the typical symptoms of an acute coronary occlusion.

In summary we have a 33-year old negro detective with a compulsive personality who had all the dynamics of a passive, dependent character, and who defended against his passivity and feminine identification by narcissistic, competitive strivings, aggression and promiscuity. His hostility was repressed for the most part and well controlled through his identification with the law. He unconsciously wished that his father (boss) would die and that he could take over the head of the family (business). Being in charge of the agency was, in effect, having his wish granted. He became excessively panicky, and in his panicky state retreated to a passive oral relationship to women. He compensated fairly well until about six months prior to his attack. Signs of gradual mounting tension in the form of irritability, changes of mood, increased activity, overeating, alteration in sexual symptoms, etc., led up to the phase during which his defences began to break down and overt anxiety and panic became evident.

During the interviews the patient became conscious of the sources of his fears and was helped to make a more realistic approach towards his work and his life situation. He was helped to express considerable resentment which he had repressed for so many years, and was relieved of intense guilt feelings. As a result of psychotherapy his tensions diminished so that his recovery and con-

valescence was uneventful. The referring physician was then able to continue with a combined medical and psychiatric approach in the treatment of this patient.

More and more evidence is being accumulated which would indicate that emotional factors play an important role in contributing to the production of myocardial infarction. The case presented was one of a consecutive series of 43 patients suffering from an acute myocardial infarction. A control group (excluding patients with cardiovascular disease, mental, nervous and psychosomatic illness) matched for age, sex and race, was also studied. Interviews were carried on at the bedside by a psychiatrist. Wherever possible, significant members of the family were also interviewed.

A diagnosis of *neurosis* was made when the patient gave a history of symptoms of emotional origin that interfered with his relationship to other people or seriously impaired his capacity to enjoy life. This occurred in 10 of the coronary group as opposed to 6 in the control. *Character disorder* referred to those patients who act out their impulses, while symptoms of anxiety were few or absent. Eighteen of the coronary group were character disorders as opposed to 9 in the control. Six patients had physical stress prior to their occlusion.

Gradual mounting tension of emotional origin, months or years in duration, occurred in 21 of the cardiac group. There was no gradual mounting tension in the normal group. Sixteen of the coronary group showed *acute emotional stress*, which at times was added to the gradual mounting tension prior to occlusion. Only 4 of the control group had acute emotional stress prior to illness. The patients were, for the most part, unaware of gradual mounting tension; it was usually seen only in hindsight or observed by others. Signs of gradual mounting tension varied qualitatively and quantitatively. Some of these were increased smoking and drinking, tension, irritability, suppressed anger, insomnia, indecisiveness, withdrawal, increased dependency, obsessive thinking, preoccupation with bodily symptoms, inability to concentrate, disturbances of memory, sexual problems, depression, fears, etc.

Sexual problems occurred in 21 of the coronary group as opposed to 10 of the control. Loss of libido, premature ejaculation, a feeling of growing old, change of life, preoccupation with the idea of loss of manhood, compensatory efforts to prove oneself still a vigorous male, impotency, are some of the problems which affect men at this age, however, it may also be that alteration in sexual habits may be a sign of increased gradual mounting tension. In 4, and probably 5 other cases, attacks occurred on the anniversary of a significant event in the life of the patient. This is the *anniversary reaction.*

Reaction to illness was studied. The patients' reactions to illness were considered normal when they reacted with realistic concern, displaying mood changes which gradually disappeared as healing occurred. In only 11 of our coronary cases did we judge reaction to be normal. Denial, depression and regression were considered pathological reactions to illness.

We could not find any specific coronary personality in our series. There was only one death in the series, however, this occurred before any therapeutic relationship was established. In our series psychotherapy was helpful to the patient and aided in the nursing and medical care. This was particularly true in those patients who utilized pathologic defense mechanisms.

Physicians are often apprehensive about upsetting a patient who has suffered from an acute myocardial infarction. The patient is usually put to bed, warned

not to move around, is given complete bed care and told not to worry. Thus he must contain all of his anxieties and so stew in his own juices. We found that patients welcomed the opportunity to talk about themselves, deriving great benefit from getting things off their chest. Many resistances, however, had to be overcome. This was particularly so in patients suffering from character disorders. Probing without being able to handle whatever comes out is dangerous. The physician must use caution in conducting this kind of investigation, since the problem is to remove and abate disturbing emotional feelings rather than to aggravate them or fix them. Many patients with myocardial infarction may be too ill mentally to be interviewed even by a well-trained psychiatrist. This, however, can be quickly gauged by an adequately trained individual. It is essential to go slowly and cautiously, making certain that each interpretation leaves the patient more comfortable rather than more bewildered or disturbed.

Psychotherapy should be aimed at relieving the patient's guilts and anxiety arising out of hostility or competition, as well as encouraging the patient to slow down his reaction time to receptive stimuli.

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Résumé

Un cas caractéristique illustrant la participation des facteurs émotionnels dans le dévéloppement de la thrombose coronarienne, est décrit en détail. Ce cas fait partie d'une série de 43 cas chez lesquels on a essayé de déterminer la composante émotionnelle, en comparant ce groupe à un groupe témoin.

Le diagnostic de névrose fut posé dans 10 cas de thrombose coronarienne, par comparaison à 6 cas dans le groupe témoin. Par contre il y eut 18 cas de trouble du caractère chez les coronariens par rapport à 9 chez les normaux. Un effort physique précède la crise dans 6 cas seulement.

Inventoriant les causes possibles on retrouva la présence de tension chronique et de troubles sexuels dans un nombre significatif de cas de thrombose coronarienne.

L'étude ne révéla pas de profil de personnalité spécifique au malade coronarien. De plus, contrairement aux théories médicales habituelles, l'auteur constata que les patients sont reconnaissants de pouvoir parler de ce qui les ennuie. Cette psychothrapie cependant doit être prudente et s'affairer à soulager le patient particulièrement de sa culpabilité et de son anxiété soulevées par ses sentiments d'hostilité ou de compétition.

SUICIDE RELATED TO CHANGE OF PHENOTHIAZINE —A Clinical Note

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This clinical note is being submitted in order to promote awareness among those who are likely to be using trifluoperazine with the need for particularly close observation during the period in which the patient may be returning from a relatively anxiety free dream world to a reality that may prove disenchanting.

During the course of considerable trial with trifluoperazine it was evident that, while this agent has anti-psychotic properties which render it an extremely useful component in our armamentarium in treating the schizophrenic, these properties are not necessarily tranquilizing. In some patients, therefore, if a change is made from other agents to trifluoperazine, there may be a real danger of confronting the patient with the need to accept the discouraging facts of their reality circumstances at a time when they are less "tranquilized" than they had been on their previous medication, especially if that had been chlorpromazine.

Case No. 1

This fifty-two year old married lady had spent twelve years in hospital, having made little initial improvement from courses of E.C.T. and insulin coma. In June 1957 she was started on chlorpromazine and maintained on doses averaging 600 mg. daily for a year and then 400 mg. daily until being switched on February 10th, 1959, to trifluoperazine 15 mg. daily. At the time of the change she was free of the hallucinations that had plagued her prior to the chlorpromazine but flat and withdrawn, describing the hospital as a hotel, and well insulated from the stark reality of being a long term schizophrenic with limited rehabilitation prospects. On February 27th she told her ward doctor that she realized she was in a mental hospital and seemed to accept this disillusionment fairly philosophically. On February 29th, when her daughter came to visit, she was so much in touch with reality that she was taken home for the day for the first time in several years and there behaved as a sophisticated, outwardly well individual, enjoying social contacts with friends whom she remembered perfectly from many years ago. Just before returning to the hospital she did seem a little puzzled when she realized that there had been so many changes on the outside world and there would be no immediate prospects of rehabilitation with her family. The ward staff agreed that she had enjoyed her visit and seemed "amazingly improved" but on March 4th her body was found in a river near the hospital grounds. She had enjoyed ground privileges on an open ward for many months. Although in retrospect some of the nursing staff recalled having felt that she seemed "a little disillusioned", there had been nothing in her speech or behaviour that would have made us suspicious of her in terms of being a suicidal risk unless we had been forewarned of the possible outcome of the change from chlorpromazine to trifluoperazine.

Case No. 2

This middle-aged single lady had three previous admissions to hospitals in the eastern part of the country and was admitted here in November 1958 because, having hitch-hiked across the country bound for Victoria, she had been unable to persuade the operators of the ferry that they would be privileged to have the opportunity to convey her, free of charge, because she was an Archangel. She

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maintained that a former king of England had been her son, that she had a special relationship with God and a special mission to perform. She was treated for six weeks with chlorpromazine in doses up to 800 mg. daily and became a well adjusted patient who was industrious and helpful on the ward, enjoyed her ground privileges but still maintained her religious ideas. On December 23rd, 1958, her medication was changed to trifluoperazine 20 mg. daily. By January 29th she was talking to her ward doctor about her previous "crazy ideas" and, although she still had some psychotic residual, her delusions were rapidly subsiding. Two weeks later she was moved off the small highly staffed ward to a larger open ward with 170 patients and very limited nursing staff and during the remaining two months of her life was regarded by them as becoming increasingly well although, as her delusions subsided, she became "more ordinary" and "not as cute" as she had appeared earlier. To the patient one suspects that her continuing acceptance of reality divested her life of such glamour as it had possessed and she became increasingly disillusioned. On April 6th she absented herself without her glasses (without which she had greatly impaired vision) and her body was subsequently recovered from a lake two miles distant. A Coroner's Jury returned a verdict of Accidental Death due to Drowning.

Although there is some doubt as to whether the second case was suicidal, we have felt it wise to publish these cases with the suggestion that this new drug be used with considerable circumspection, particularly in chronically ill patients who may have been quite comfortable in their world of unreality, and that in the early phases of this treatment the patient should either be in an area with better than average staffing, with the staff well informed of these possibilities, or else this drug should be combined with one of the more traditional tranquilizers, such as chlorpromazine.

Summary

Two cases are quoted of patients who appear to have taken their lives shortly after changing from chlorpromazine to trifluoperazine. It is suggested that trifluoperazine is less powerful as a tranquilizer, but is a potent anti-psychotic agent which tends to bring the patient back from a non-threatening dream world of chronic hospital adjustment to the distressing aspects of reality. It is suggested that patients should be carefully watched when the change is made to trifluoperazine or else that this drug be given in conjunction with one of the traditional tranquilizers, such as chlorpromazine.

Résumé

Deux patients se sont apparemment suicidés peu après que la chlorpromazine eut été remplacée par la trifluoperazine. Ces observations suggèrent l'hypothèse que la trifluopérazine a un effet tranquillisant moins puissant, mais une action "anti-psychotique" très grande, capable de ramener le patient du monde onirique et moins menaçant que constitue l'hospitalisation chronique et de le mettre brutalement en face de la cruelle réalité Il est donc recommandé d'accompagner le changement de médication de la plus étroite surveillance ou d'adjoindre à la trifluopérazine un autre tranquillisant comme la chlorpromazine.

THE NATIONAL HEALTH SERVICE IN BRITAIN
with Special Reference to Psychiatry

By A. B. Monro, M.D., Ph.D., D.P.M.[1]

During a recent very stimulating and interesting tour of the Eastern United States, I found widespread interest in the British Health Service, together with considerable dislike and misunderstanding of it. My visit unfortunately could not be extended to Canada, but I had the pleasure of meeting a number of Canadian psychiatrists, who suggested that the topic was just as interesting to them as to their American confrères. This article is not a "defence" of the British service, nor is it an expression of any official point of view. It is a purely personal account, designed to state some of the facts and some informed opinions and criticisms, so that those who are interested in either a friendly or a hostile way may direct their polemics at real targets.

I do not remember hearing any American spontaneously using the title "National Health Service", but the phrase "Socialised Medicine" was common. These words conjure up a picture of a bureaucratic system fastened by one political party on an unwilling medical profession and a deluded populace. The truth is, however, that the first decisive step towards State medicine was taken by the Liberal party in 1911, by the introduction of a general practitioner service for all wage-earners below a certain income level. Various extensions occurred during the years before World War II, and would have continued had there been no war. This process was, of course, decisively accelerated by the economic situation facing Britain in 1945, due notably to the sale of overseas investments. All major political parties were in favour of a National Health Service, and over 80% of doctors voted in favour of joining, in a special referendum of the profession. The only really controversial issue was whether the whole population should be covered, or whether some 80-90% should be cared for by the State, while the remainder made private arrangements. In the event the Socialist party came to power, and introduced the 100% cover which they favoured. Even so, a very high degree of decentralisation was built into the service. Local initiatives which had developed prior to the service were fostered and encouraged. Indeed one eminent psychiatrist who has made an original contribution to the English scene feels that he has had more freedom to experiment under the Health Service than he could have obtained in the U.S.A.

There is no doubt that psychiatry has derived great benefits from the Service. A certain proportion of the hospital budget has been devoted to psychiatric hospitals, which have been able to expand their services more quickly than before. Psychiatric units in general hospitals have been created at an increasing tempo, as formerly many hospitals were financially "in the red", and could not find money for such developments. The creation of a unified service which includes general practitioners and public health authorities has resulted in new opportunities for psychiatry to become a community service. Partly as a result of these factors, psychiatry has expanded more rapidly, under the Health Service, than any other specialty.

It can be argued, of course, that the creation of a National Service has militated against the private practice of psychiatry, and especially of psychotherapy. This is too large a subject to be tackled at length in a short paper, but some pertinent factors may be mentioned. There are probably fewer people

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in Britain with the money available for expensive private treatment than there are in North America. There is therefore less scope for private practice, especially in psychotherapy. Furthermore psychotherapy appears to be less highly esteemed in Britain than in America. This may be regarded as regrettable, but nevertheless I think it is a fact. British psychiatry, and the British people, tend to emphasize social factors and the influence of environment, and psychotherapists of all schools have been essentially enthusiastic exponents of minority viewpoints. These obstacles to private psychiatry cannot fairly be blamed on the Health Service. It may be that the existence of an efficient service which does not greatly concern itself with long-term psychotherapy tends to make the path of the private psychotherapist rather harder, but the Health Service does not prevent a psychiatrist from doing private practice if he can get it. By and large, psychiatrists who have completed their specialist training are free to work either whole-time for the State, or part-time for the State and part-time privately. This is not to say that a psychiatrist can, without waiting, find a part-time job in the corner of the country of his choice. It does mean, however, that a man who wishes to practice on a part-time basis can do so, though he will have to work, and probably wait, for a "plum" job. This is perhaps as it should be.

What has been said so far is almost entirely in favour of the Service. There is, of course, another side to the picture, and it would be idle to deny that there are serious misgivings both on the part of doctors and of informed laymen. These, however, are about different matters from those which arouse hostility and fear in America. British criticism therefore has a different slant, and a different angle of approach from any that I have so far heard from Americans or Canadians. Those who are interested could do worse than to read a pamphlet on "Hospitals and the State" issued by the Acton Society Trust (1). This is a report by an independent body, and its chief contributor is a layman eminent in a profession other than medicine, who nevertheless has extensive experience of the workings of hospitals and the Health Service.

Broadly speaking, the issue of State medicine arises when a substantial proportion of the population cannot pay an economic price for medical care, whether at home or in hospital, even with the help of privately arranged insurance. In a democracy, this state of affairs is bound to result in political pressure in favour of State intervention. If this is accepted, public funds are devoted to providing medical care, and some degree of public control of these moneys must follow. The doctor working in a state service cannot have the same control over the resources devoted to his profession as the doctor who runs his own hospital or private practice; but then he is not risking his own money. Thus, in a State service there is potential conflict or tension between the doctors, who are concerned to maintain proper professional standards of care and treatment, and the custodians of public money, who have a proper duty to see that this is well spent and accounted for.

The resolution of this tension is simply a problem of management, in the modern sense of the term. It is no different in principle to that facing all large scale undertakings, though the difference between the goals of a health service and an industrial concern is such as to require differences in the application of basic principles. This matter is discussed at much greater length in "Hospitals and the State", (1) than is possible here, where only certain crucial issues can be mentioned.

The main difference, as I see it, between Britain on the one hand, and the United States and Canada on the other, is that Britain has accepted the need for State intervention, on the grounds that too few of her citizens can afford to pay an economic fee for modern medical care. The United States and Canada appear to be opposed to taking this step. American arguments are therefore directed towards showing that State intervention is undesirable and unnecessary, and has inevitable evil consequences. British thought is no longer concerned with this issue, but with the problem of hammering out the conditions which will allow both proper medical freedom and proper control of public funds. As Britain and America are dealing with different problems, exchanges of view between them are fraught with almost infinite possibilities of misunderstanding, made worse by the fact that each uses the English language in a subtly different way.

One point needs to be brought out into the open, and that is a suggestion sometimes implied in America that the Health Service represents a deflection from the principles and practice of democracy. This, at least, is not so. The vast majority of the people want it; so much so, that no political party could oppose it and retain its strength. The opinion of doctors is more difficult to gauge, as there has been no recent referendum, but it is probably true to say although there are cogent and serious criticisms of the way the Health Service works, these are directed mainly towards improving the service, rather than doing away with it. Here again one strikes the bedrock fact that State intervention is the result of economic pressures. A relatively poor democracy may work in ways, and through institutions, which are different from those appropriate to a rich one, and yet be democratic. Otherwise one is forced to the conclusion that the only "true" democracy is a rich one, a view from which I am sure the Founding Fathers would have dissented vigorously.

If, then, it is accepted that economic pressures may necessitate State Medicine, and that this can occur within the framework of democracy, the issue becomes one of management. It is on this score that the Health Service appears to be open, and wide open, to criticism which on any showing is serious, and in the eyes of some is devastating. It is fairly generally accepted that managerial authority is of two kinds, commonly known in America as "Formal" and "Sapiential". Formal authority derives from executive power, while sapiential derives from special knowledge. These concepts correspond broadly to British ideas of executive and advisory functions in administration. Good administration and management require that formal and sapiential authority should work in harmony.

Within the British Health Service, formal authority is vested by Parliament in the Minister of Health, and much is also exercised by the Treasury. Within the Hospital Service, this power is decentralised by the Minister to Regional Hospital Boards, and by them to Hospital Management Committees. These bodies have a membership consisting of not more than 25% of doctors, the remainder being laymen. The Minister, each Regional Board and each Hospital Management Committee have a Medical Advisory Committee. Thus the position of the doctors is very limited as regards formal authority, but amply provided for on the advisory side. It is clearly a matter for argument as to whether the doctors are relegated to a position which is deficient in executive power, and too purely advisory. It is not, however, a matter for argument that efficiency depends on the executive being of the same calibre as the advisory. If this does not happen, the two streams of authority cannot collaborate fully, and may indeed clash.

There is a strong case to the effect that the executive arm is not strong enough. This is set out in "Hospitals and the State", so only the major points need be stressed here.

1). The provision of "top management" jobs in the Hospital service is inadequate both as regards numbers and pay. Various estimates indicate that any large industrial concern would employ from 2½ to 10 times as many people at this level.

2). The apparatus for the centralisation and diffusion of information, i.e. for "communication" in the technical sense, is extremely inadequate.

3). There is confusion between the role of proficient managers, and the role of laymen representing the interests of patients and the public. As a result of this confusion, laymen who have a valuable contribution to make to the hospital service find themselves unfairly saddled with the responsibility for executive decisions, when they could play a more valuable part by feeding their views into the information services of the organisation.

These weaknesses tend to aggravate, rather than to resolve, the fundamental tension inherent in the creation of the service, that between the drive of the doctors to maintain standards, and that of the executive to maintain control over public money. It is greatly to the credit of both that a machine with such fundamental administrative weakness has been made to work at all.

The British Health Service thus has its problems. They are by no means insoluble, but it is to be hoped that remedial action will be taken soon. The present situation is comparable to an attempt to run a modern airport with excellent personnel, but without an up-to-date control system, or proper navigational and landing aids. In my opinion this view of the situation is worthy of consideration by both friends and enemies of the service in North America.

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Résumé

L'auteur parle d'une visite récente qu'il a faite dans l'Est des Etats-Unis et durant laquelle il a peu se rendre compte de l'intérêt considérable suscité par le Service de Santé britannique. Il a trouvé aussi qu'il y avait une grande hostilité et de nombreux préjugés envers cet organisme d'état de la part de ses confrères américains. L'article a pour but de présenter les faits pour orienter d'une façon positive toute discussion sur le sujet. C'est ainsi que l'on n'appelle jamais le Service par son nom mais qu'on emploie plutôt l'expression "Médecine d'Etat". On l'associe à un parti politique. En fait, les premières mesures vers la médecine d'état furent prises par le Parti Libéral en 1911 et d'autres furent ajoutées graduellement entre les deux guerres mondiales. En 1945, à cause de la situation économique, tous les grands partis politiques et au-delà de 80% des médecins étaient en faveur du Service National de Santé et les dissensions ne portaient que sur l'étendue de ses fonctions.

La psychiatrie a certainement profité beaucoup de la création du service de Santé et s'est développée plus rapidement que les autres spécialités. Une certaine portion du budget des hôpitaux a été attribuée aux hôpitaux psychiatriques qui ont augmenté rapidement leurs facilités de traitement. Les unités psychiatriques dans les hôpitaux généraux se sont répandues partout alors que le budget ne le

permettait pas auparavant. La création d'un service unifié comprenant les praticiens et les autorités de la santé publique a permis à la psychiatrie d'être mieux intégrée dans la communauté. On dira évidemment que la pratique privée de la psychiatrie et spécialement la psychothérapie souffrent de cet état de chose. Il faut dire en revanche qu'il y a moins de gens qui peuvent payer les frais d'une psychothérapie en Angleterre. De plus, le peuple britannique ne porte pas le même intérêt à la psychothérapie que le peuple américain. Les facteurs sociaux et l'influence de l'entourage reçoivent plus d'attention.

Il y a évidemment un autre côté de la médaille et des difficultés se présentent. Le médecin au service de l'état n'a pas le même contrôle sur le budget alloué à sa profession que celui qui a son propre hôpital ou sa pratique; d'un autre côté, il ne risque pas son argent personnel. L'Etat demande des comptes et il peut y avoir conflit entre les administrateurs responsables des dépenses publiques et les médecins soucieux de maintenir les standards de leur profession. Ceci est avant tout un problème d'administration et ne met pas seulement en cause la médecine d'état. Dans le système britannique. Les médecins ont peu d'autorité administrative, mais ont beaucoup d'importance comme conseillers. Pour que tout fonctionne bien il faut donc que les administrateurs et les conseillers travaillent en harmonie. Il faut aussi que le calibre des administrateurs soit le même, que celui des conseillers. C'est là le coeur des difficultés du Service National de Santé et où il faut apporter des remèdes.

Canadian Mental Health Association Research Grant awarded to

REV. DR. NOEL MAILLOUX

A grant of $22,500 has been awarded to Dr. Mailloux for continuation of his research into the personality of delinquent boys with a view to improving treatment of young people in custody. This grant will enable Dr. Mailloux to devote the next four years almost entirely to this research.

This is the first award made under the newly organized research plan of C.M.H.A.

THE TREATMENT OF DEPRESSIVE STATES WITH IMIPRAMINE HYDROCHLORIDE*

I. S. Kenning, M.D., N. L. Richardson, M.D., F. G. Tucker, M.B.

Previous investigators of this drug, notably Kuhn[1] in Switzerland, and in this country Lehmann[2], Azima[3], and Mann[4], and others have reported on its efficacy in different situations in the treatment of depressed persons. The purpose of this study is to evaluate the drug by the double blind method in the treatment of acute depressive states admitted to a clinic of psychological medicine. We wished to establish whether or not the drug has a specific effect over and above that of hospitalization and non-specific agents.

Method

To carry out this study all patients admitted to the Crease Clinic of Psychological Medicine over a period of time and showing two or more of the following symptoms were entered on a project to investigate this drug. The symptoms were:

(1) Depression of Mood.
(2) Psychomotor Retardation or Agitation.
(3) Attitude of Hopelessness.
(4) Suicidal Act or Gesture.
(5) Loss or Self-assertiveness.
(6) Loss of Self-esteem.
(7) Difficulty in making decisions.

Because it was our purpose to investigate primarily its efficacy in acute depressions all those patients who showed schizophrenic components, paranoid components, epilepsy or mental deficiency were excluded. In all 62 patients were referred to the project which consisted of a double blind experiment as noted above. Patients were started on 150 mg. of Imipramine per day and increased within one or two days to 200 mg. per day in divided doses. This dose was maintained for one month. Of the 62, 38 were given the active drug and 24 were given a placebo which outwardly appeared identical. Only one of the authors was aware whether the patients were getting the drug or the placebo. The clinical appraisals were done by the other two authors immediately before commencing the study and again at the end. These written reports were gone over and evaluated by a third person. The degree of correlation of improvement was very good. Patients on the project were rated by the Head Nurse on the ward by means of a Wittenborn Rating Scale.

The following psychological tests were also done:

(1) Tapping and Dotting. This is a motor task adapted from a test of mechanical ability which we believe might give some indication of the patients degree of motor retardation. The patient had to tap three times in a series of circles, or place dots in irregularly placed tiny circles.

(2) A test wherein the patient is asked to name words as quickly as he can beginning with a particular letter. We believed that this test would give us some idea of the patient's ability to bring forth old associations and his freedom from blocking. The number of words he could bring forth in thirty seconds was counted.

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(3) The final test was the digit symbols sub test of the Wechsler Bellevue Adult Intelligence Scale, Form II. In this special test the patient must substitute symbols under numbers according to a code laid out. In this test we hoped to measure the patient's ability to learn new associations.

Unfortunately we were not able to do psychological assessments on all of the patients who had clinical evaluations. However a total of 35 patients were assessed in this way.

Using the criteria for selection noted above the patients fell into the following diagnostic groupings.

(1) Psychoneurotic Depressive Reaction.
(2) Psychotic Depressive Reaction.
(3) Manic Depressive Psychosis – Depressed.

For the purpose of reporting we are dividing the group only in terms of Neurotic Depressive Reaction or Psychotic Depressive Reaction.

A further study was also done following the initial experiment to determine if those patients who had received the drug and had not responded well and later were given E.C.T. were sensitized in such a way that they required less electric shock to bring about improvement. This has been referred to as an electric shock sparing effect.

Results

By referring to Table I noted below it can be seen that out of the control group of 24 patients, 6 improved and 18 did not. Out of the drug treated group of 38 patients, 24 improved and 14 were unimproved. There is then an overall improvement rate of 60% in the drug treated group. This is generally lower than results reported by other investigators, notably Lehmann and Kuhn, who show a 75% improvement with Endogenous Depression, and Azima and Vispo who report 83.6% general improvement. However using the Chi Square Test in evaluating this improvement against our control this is considered a highly significant difference within the two groups at the 1% point of confidence. That is there is less than one possibility in One Hundred that such results could be obtained by chance alone. We believe this establishes the drug as an effective agent for the treatment of depressive syndromes over and above the possible effect of non-specific factors such as hospitalization, milieu, etc. As reported by other authors the Endogenous Retarded Depressions tend to respond the best. However, we found that some patients in this group showed virtually no improvement while similar cases on exactly the same medication and management showed some of the most remarkable results. We are not able to explain this observation. Of the six patients on placebo who improved, three of them obtained good results and this does indicate the fact that depression is a self-limiting disease and that purely hospital management itself or no treatment can lead to remission. In explaining our lower incidence of overall improvement we would

TABLE I: DEGREE OF IMPROVEMENT

	Maximum	Moderate	Minimum	Total Improved	Unimproved
Drug	12	9	3	24	14
Placebo	3	2	1	6	18

like to point out that conducting a controlled study on an admission group of very depressed patients is a difficult task due to the seriousness of the illness in some patients. Accordingly where a doctor indicated that his patient was very sick the author may have been biased to give the drug to more patients who were very ill and the placebo to others when this was not indicated. This however would load the experiment against the drug making the results more significant than they actually appear. Furthermore some of the control patients who improved while in hospital did not hold up their improvement once discharged. An extreme example of this was one psychotically depressed man who appeared to improve and actually seemed to function much better at least while he was in the hospital environment. He was allowed out on leave during which time he committed suicide by jumping off the Lions Gate Bridge.

All patients were also rated according to the degree of improvement shown. Maximum represents a complete remission, moderate a substantial improvement by which the patient was able to function quite adequately out of hospital but with continuing minimal disability, and minimum in which only little relief of symptoms was obtained. Of the drug treated patients 12 showed a maximum improvement, 9 moderate, and 3 minimum improvement. The placebo patients who improved showed the same general distribution through the three grades.

The total group of patients was also divided according to psychotic or neurotic degree of depression according to the following criteria:

(1) Severity and degree of depression.
(2) The degree to which the illness affected the total personality and resulted in divorcement from reality.
(3) Presence or absence of gross delusions, particularly of a nihilistic kind.
(4) Intensity of agitation.
(5) Presence or absence of a cyclical picture of attacks.
(6) The agreement of two senior physicians.

Table II reports these results and it can be seen that out of 16 patients with Psychotic Depression treated with the drug 11 showed improvement. Out of 22 patients classified as Neurotic Depression treated with the drug 13 showed improvement. Although not of sufficient numbers to be statistically significant there would appear to be a slightly greater percentage of improvement amongst the Psychotic Depressions than amongst the Neurotic Depressions. Other impressions noted by the authors were that those patients who were greatly agitated did rather poorly. However we did not combine the use of the drug with any other such as ataractics so this factor might be controlled by their concomitant use. We also gained the distinct impression that where there was a large reactive

TABLE II: DEGREE OF IMPROVEMENT

		Maximum	Moderate	Minimum	Total Improved	Unimproved
Psychotic	Drug.....	6	3	2	11	5
	Placebo....	1	1	1	3	8
Neurotic	Drug.....	6	6	1	13	9
	Placebo....	2	1	–	3	10

element the results tended to be poor. This is as might be expected, that unless the patients were able to deal adequately with their external situation or it could be changed in some other way that results of treatment merely by drug alone were poor. On the other hand in some cases not included in the study the drug did seem to be an adjunct to psychotherapy. It was noted that patients felt capable of tackling their situation and that they were able to do this more objectively.

In order to check the proposed E.C.T. sparing effect of the drug those patients who showed minimal improvement and required electric shock or those patients who were unimproved and were subsequently treated in this way were checked to ascertain the number of treatments required to bring about a substantial improvement in their symptoms. There were ten patients who were on the drug and following the experiment received E.C.T. In all they received a total of 90 electric shocks with an average of 9. Seven patients on placebo received electric shock following this experiment and they were given a total of 98 shocks averaging 14 per person. The median for the drug group was 8½ and for the placebo group 10. This is probably an indication of a minimal sparing effect, but we cannot say anymore at the present time. In spite of these findings which are only suggestive we did note as did others, particularly Lehmann, that some patients did show a remarkable response when put on E.C.T. following the drug.

Regarding the Tapping and Dotting, Word Association and Digit Symbol Tests, in each of these there was greater improvement in the drug group than in the controls but none of the average improvements approached statistical significance. We used a "t" test in our analysis of results. On the Wittenborn Psychiatric Rating Scale we tested for only two clusters of symptoms, the one purported to measure anxiety, and the one measuring depression. We also took into consideration the total score for all clusters which we believe would give some indication of a degree of unusual behaviour. All of these measures, anxiety, depression, and total score show average greater increase to normal behaviour for the drug group over the placebo group but the difference between the two groups did not approach statistical significance.

Side Effects and Complications

No serious complications were noted during the study or have been observed by the authors in the use of this drug with many other patients. After the first while we discontinued the practice of taking routine blood pressures but syncope and hypotension were not noted except in one elderly patient. Epilepsy was also not observed. It should be noted that the age group of our patients was perhaps younger than others which reported the presence of hypotensive reaction. We did not see any addiction in terms of undue dependency or of withdrawal symptoms. However, some patients did relapse following withdrawal of the drug at the end of one month. The majority but not all of these responded after the drug was reinstituted. The most common minor complication noted was that of sweating. This occurred quite frequently but tended to subside after the medication had been continued for a few days without necessarily reducing it. Tremors were also noted as was constipation. Blood work was not done but there were no serious ill effects in this area. On the whole complications or side effects were not an issue and the drug appeared to be relatively non-toxic. It seems to the authors that side effects generally are regarded as less serious when the patient is in hospital than when he is on an

outpatient basis. This may be due to the better control of the patient, more support from the hospital regime and personnel, and perhaps less direct responsibility of the physician to his patient.

Summary and Conclusions

(1) 62 Depressed patients were observed in a double blind study.
(2) There was a 60% general improvement in the drug treated group. Comparison of the drug and control group by clinical evaluation was significant at the 1% level of confidence.
(3) The differences between a small number (35) of drug and control patients were not significant in the psychological tests employed.
(4) The drug may have some E.C.T. sparing effect.
(5) No serious complications or side effects were encountered.

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Résumé

1) 62 patients déprimés furent soumis à un double contrôle aveugle.
2) Il y eut une amélioration générale de 60% dans le groupe sous médication. La comparaison entre le groupe sous médication et le groupe contrôle fut significatif à 1% près.
3) Les différences entre un petit nombre (35) de patients avec médication et de patients sans médication ne furent pas mises en évidence d'une façon significative par les tests psychologiques utilisés.
4) Le médicament peut diminuer le besoin de sismothérapie.
5) Il n'y eut pas de complication ni d'effets secondaires.

Re.: "Etude Preliminaire de la reactivation des mechanismes peripheriques chez les schizophrenes", Vol. 4, 1959—page 235

CORRECTION: We regret that due to a printers' error the correct name of the senior author, Dr. J. Poirier, was misspelled.